PEST CONTROL

DECEMBER 1951

EVERY MONTH SINCE 1933

600 rats killed in one poisoning of a city dump! Here's a Wisconsin PCO's accomplishment. See page 9.

TEST INDEX IN THIS ISSUE

CHLORDANE POWDERS AND LIQUIDS
DDT POWDERS AND LIQUIDS
ANTU
PYRETHRUM POWDERS AND EXTRACTS
PYRINS
PYRISCENTS (insecticide perfumes)
AEROSOL FORMULATIONS
2,4-D AND INPC WEED KILLERS
BOTANICALS • ROTENONE • SABADILLA
STIMTOX A
COTTON DUST CONCENTRATES
BHC POWDERS AND LIQUIDS
TOXAPHENE POWDERS AND LIQUIDS
TETRAETHYL PYROPHOSPHATE

There's a POWCO BRAND CHLORDANE CONCENTRATE for every need. 20% oil soluble and 60% emulsion concentrates are manufactured from refined chlordane. Also available: 4-lb. (45%) emulsion concentrate, and technical grade.

order your supplies now!

powco BRAND

KILLING POWER—THAT'S THE THING!

John Powell & Co., Inc.

ONE PARK AVENUE, NEW YORK 16, N. Y.

Sales Offices: Philadelphia • Pittsburgh • Huntsville • Chicago • Fort Worth • Denver • San Francisco
Canada: Charles Albert Smith, Ltd., Toronto, Montreal • Argentina: John Powell y Cia
Representatives in Principal Cities of the World

PROFESSIONAL...

ONE GALLON STAINLESS STEEL SPRAYERS

FULLY GUARANTEED

LIGHT IN WEIGHT...

EASY TO HANDLE...

DESIGNED ESPECIALLY FOR PEST CONTROL OPERATORS

INTERCHANGEABLE WANDS
AVAILABLE WITH TWO WANDS AND A SPECIAL COUPLER ALLOWING YOU TO CHANGE FROM A SOLID STREAM TO A FAN TYPE SPRAY PATTERN WITH A TWIST OF THE FINGERS.

"THE B & G"
INCLUDES: ONE GALLON STAINLESS STEEL TANK, PUMP UNIT, ADJUSTABLE CARRYING STRAP, BRASS SHUT-OFF VALVE, 4 FT. HOSE UNIT, 9" THREADED-ANGLED EXTENSION WITH FAN PATTERN NOZZLE.

NEW MULTEEJET NOZZLE
FOUR TYPES OF SPRAY PATTERN CAN BE HAD BY ROTATING TIP AND TIGHTENING RETAINER RING WITH FINGER PRESSURE.

SEVERAL REASONS WHY PCO'S ARE STANDARDIZING WITH B & G SPRAYERS

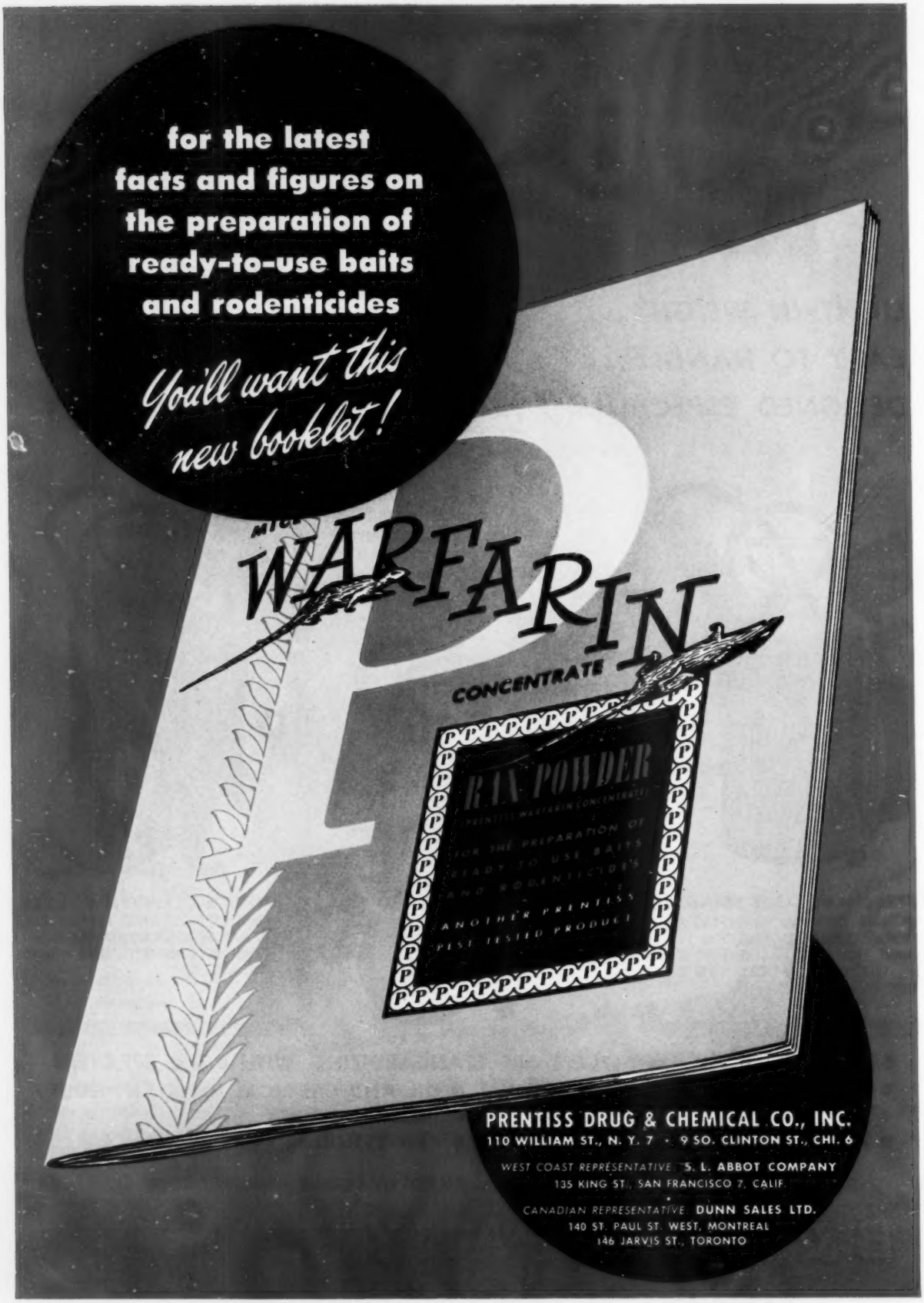
- **ELECTRICALLY SEAM-WELDED TANK**
- **QUICK-ACTING SHUT-OFF VALVE**
- **PRECISION NOZZLES**
- **OIL AND CHEMICAL RESISTANT HOSE**
- **IDEAL CAPACITY**
- **PROFESSIONAL IN APPEARANCE**

ALL PRICES F.O.B. PHILADELPHIA, PA. • SUBJECT TO CHANGE WITHOUT NOTICE

B&G COMPANY

4725 RISING SUN AVE.
PHILADELPHIA 20, PA.

"SERVING THE PEST CONTROL INDUSTRY"


for the latest facts and figures on the preparation of ready-to-use baits and rodenticides
You'll want this new booklet!
WARFARIN
CONCENTRATE
R-X POWDER
ANOTHER PRENTISS PEST TESTED PRODUCT
PRENTISS DRUG & CHEMICAL CO., INC.
110 WILLIAM ST., N. Y. 7 · 9 SO. CLINTON ST., CHI. 6
WEST COAST REPRESENTATIVE: S. L. ABBOT COMPANY
135 KING ST., SAN FRANCISCO 7, CALIF.
CANADIAN REPRESENTATIVE: DUNN SALES LTD.
140 ST. PAUL ST. WEST, MONTREAL
146 JARVIS ST., TORONTO

You're the Boss

Many of you have wondered how information published in each issue of *Pest Control* is gathered, so we're using this end-of-the-year column to tell something about the staff that compiles our features, columns and news.

A group of qualified correspondents encompasses nearly every state in the Union, plus Canada and Hawaii. *Pest Control* has contributors in Washington, D. C., New York, Buffalo and Rochester, N. Y., Los Angeles, Berkeley, San Francisco and Whittier, Calif., Chicago, Urbana and Springfield, Ill., Tampa and Orlando, Fla., Newark and New Brunswick, N. J., Atlanta, Ga., St. Louis and Kansas City, Mo., Lafayette and Indianapolis, Ind., Amherst, Boston and Worcester, Mass., Cedar Rapids, Iowa, Madison, Wisc., Houston, Amarillo, and Dallas, Texas, Tacoma, Wash., Detroit, Mich., Memphis, Tenn., Philadelphia, Pa., Minneapolis, Minn., Manhattan, Kansas, and in a host of other cities contacted every month to help us keep pulse on developments.

In addition to our staff here in Cleveland, a group of specialists in every phase of pest control serve as an editorial board to evaluate feature material.

We're proud of the work these men are doing. It is through them that we have been able to establish, over the last 19 years, a reliable network of authorities who bring you dependable information each time *Pest Control* reaches your desk. Your continuing letters have helped us provide what you want. You've been the boss.

Thanks to you all and sincerest good wishes for the holiday season and for the days ahead in 1952.

James A. Nelson
Editor

PEST CONTROL

EVERY MONTH SINCE 1933

JAMES A. NELSON
Editor

WILLIAM N. TROY
Editorial Assistant

KARL HASSLER
West Coast Representative

DECEMBER, 1951 **VOL. 19, No. 12**

CONTENTS

Rodent Control In City Dumps 9

Patents Relating To Pest Control
By Dr. R. C. Roark 10

Insect Pests In Cargo Ships
By H. A. U. Monro 12

Notes From Washington 18

Elect New NPCA Regional VP's, Directors 18

Wanted: Established Pest Control Business
Pest Control Notebook By Jack Ratcliffe . . . 20

Slab-Type Construction Revealed As
Headache To TO's At Boston NPCA Meet . . 23

How Does Wood Decay? Part Two —
Types Of Fungi By Howard Olson 24

Importance Of Soils In Termite Control
Part Two By Jerome L. Howell 26

Identification Of Orders, No. 5, Hemiptera
Pest Control Primer By A. Pescop 28

Book Reviews For 1951 38

List Of State And National Association Secretaries 41

Index for 1951 44

Feature Columns

Pest Control News 30
Organization News 40
Calendar Of Meetings . . 40
Personal Briefs 42
Classified Ads 49
Pestales 50
Obituary 50
Advertisers' Index 50

Cooperating with

NATIONAL PEST CONTROL ASSOCIATION

Published Monthly by
TRADE MAGAZINES, INC.
Publication Office: 324 N. State St., Painesville, O.
Editorial and Advertising Offices
1900 Euclid Building, Cleveland 15, Ohio
Please send correspondence to our Cleveland office

Single Copy Price: 50 cents. **Subscription Rates:** 1 year, $4.00; 2 years, $7.00. Add 50 cents a year for Canadian and foreign postage. **Change of Address:** Three weeks advance notice is necessary for change of address. Both old and new address must be given. Post Office will not forward copies. **Entered as Second Class Matter** at the Post Office at Painesville, Ohio, under the act of March 3, 1879.

investigate the new Dyna-Fog JET FOG GENERATOR ... Before Buying Fog Equipment

A Revolutionary New Concept in Fog Generation

100% JET OPERATED

APPEARANCE BUILDS PRESTIGE

Professional prestige accompanies the neat, functional design, with contrasting polished chrome and black wrinkle finish of fine scientific instruments.

A LIGHT WEIGHT PORTABLE Machine That EASILY DOES The HEAVIEST FOGGING JOBS!

Produces at *least as much fog* as 650 lb. and heavier machines.

The MOST ECONOMICAL and PRACTICAL Applicator for ALL TYPES of INSECTICIDAL FOGGING

COMMUNITIES	FAIRS	AUTO COURTS	HATCHERIES
MUNICIPALITIES	RESORTS	RACE TRACKS	GREENHOUSES
TOWNSHIPS	ESTATES	HOTELS	FACTORIES
PARKS	HOMES	COUNTRY CLUBS	WAREHOUSES
PICNIC GROUNDS	FARMS	BEACHES	SHIPS' HOLDS
DRIVE-IN THEATERS	RANCHES	DAIRIES	RAILROAD CARS

A BARGAIN AT $1185.00

F.O.B. Vandalia, because easily does every job that old fashioned heavy machines can do. PLUS doing work impossible except with a portable machine.

OPENS NEW FIELDS FOR FOGGING!

LIGHT WEIGHT AND PORTABLE!

Weighs only 100 pounds. Easily moved to most advantageous position for indoor or difficult location jobs. Readily removable from motor vehicles to avoid "tying up" trucks or jeeps during "off" season or between jobs.

MINIMUM MAINTENANCE COST . . . MAXIMUM RELIABILITY!

Operates with only three moving parts; virtually nothing to go wrong. Requires no lubrication. Has no rotating parts. Years of dependable operation assured.

MORE AND BETTER FOG!

Laboratory tests show extremely dense fog output at rates up to 40 gallons per hour. Analysis of fog shows uniform particle size, assured by exclusive pulsating jet system of operation.

LESS HEAT APPLIED TO INSECTICIDE!

Killing power proven by laboratory test. Jet gases pulsating at sonic velocity pulverize insecticide formulaton with minimum application of heat. Less "breakdown" of insecticide. More kill per formulate dollar.

TESTED AND PROVEN IN BOTH LABORATORY AND PRACTICAL FIELD SERVICE!

In addition to laboratory tests the DYNA-FOG Jet Fog Generator has been utilized with great success in commercial pest control operations throughout the 1949 pest season.

SELECTIVE FOG PARTICLE SIZE!

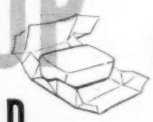
Fog particle size varied by simple control offering range from 0.5 micron for dryest indoor fogs to 75 microns for wetting down dumps, swamps, etc.

Dyna-Fog Corp.
DAYTON MUNICIPAL AIRPORT
VANDALIA, OHIO

Choice distributor territories still open. Inquiries from qualified firms are invited.

STOP TERMITES with Monsanto DDT, used as a soil toxicant

STOP MOTHS with Monsanto para-Dichlorobenzene

STOP  MOLD in soap wrappers with Monsanto Santobrite

STOP WOOD BORERS check powder-post beetles and other wood borers by treating wood with Monsanto Penta

Make the most of your pesticidal chemicals

Insecticidal chemical supplies currently are in short supply and the outlook for supplies in the immediate future is not promising. Often, you can stretch your stock of these chemicals by substituting less scarce materials for those more difficult to obtain in out-of-the-ordinary applications. For example: DDT, well-known for its effectiveness in household sprays and in controlling farm pests, is being suggested for use against termites when employed in a 5% oil solution and applied as a ground toxicant.

For information on the broad uses of Monsanto insecticidal and herbicidal chemicals, contact the nearest Monsanto Sales Office or write: MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

MONSANTO CHEMICALS to control weeds, insects and other pests

INSECTICIDES

Nifos* T (Tetraethyl-Pyrophosphate, Technical)
ortho-Dichlorobenzene (Commercial Grade)
Niran* (Parathion)
Santobane* (DDT)
Santochlor* (para-Dichlorobenzene)

FUNGICIDES

Copper 8* Quinolinolate
Santobrite* (Sodium Pentachlorophenate, Technical)
Santophen* 1 (ortho-Benzyl-parachlorophenol, Technical)
Santophen 20 (Pentachlorophenol, Technical)
Biolite*

HERBICIDES

2,4-Dichlorophenoxyacetic Acid
2,4-Dichlorophenoxyacetic Acid (Isopropyl Ester)
2,4,5-Trichlorophenoxyacetic Acid
2,4,5-Trichlorophenoxyacetic Acid (Isopropyl Ester)
Santobrite (Sodium Pentachlorophenate, Technical)
Santophen 20 (Pentachlorophenol, Technical)
Sodium Trichloroacetate

ODORANTS

Methyl Salicylate, U.S.P. (Synthetic)
Santomask*

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

Reg. U. S. Pat. Off.

MONSANTO CHEMICALS — PLASTICS ®

SERVING INDUSTRY... WHICH SERVES MANKIND

PENDANE* FORMULATIONS are SUPERIOR FORMULATIONS

*Trade-Name for Penick's Lindane

FOR THE PCO

PENDANE 10% OIL SOLUTION
PENDANE 10% EMULSIFIABLE

Many PCOs are switching to Lindane for their regular service work as well as for special clean-up jobs.

The safety, effectiveness and convenience of their applications depend upon the formulation which they use.

It is important that they select carefully—that they select a superior Lindane formulation prepared specifically for pest control use.

CHECK THESE IMPORTANT POINTS

- ✓ NONINFLAMMABLE;
- ✓ 100% ACTIVE INGREDIENTS;
- ✓ ACCEPTABLE ODOR;
- ✓ MORE LINDANE PER GALLON;
- ✓ EASIER TO FORMULATE;
- ✓ SPILLAGE LOSSES ARE LESS;

ALSO AVAILABLE

PENDANE 20% OIL SOLUTION
PENDANE 20% EMULSIFIABLE
PENDANE 25% WETTABLE POWDER

S. B. PENICK & COMPANY

50 CHURCH STREET, NEW YORK 7, N. Y.
Telephone, COrtlandt 7-1970

735 WEST DIVISION STREET, CHICAGO 10, ILL.
Telephone, MOHawk 4-5651

Rodent Control in City Dumps

CONTROLLING rodents in city dumps, where refuse is scattered about with little regard for elemental sanitation practices, is perhaps the most difficult task facing rodent control operators. In the past two years, however, a successful method of control has been worked out by Wil-Kil Pest Control Company in Milwaukee, Wisconsin.

Since January, 1950, the company, under direction of William J. Turrie, has been waging a successful war against rats infesting city dumps in the twin cities of Menominee, Michigan, and Marinette, Wisconsin.

Made Plans First

Before placing any poisoned baits, Wil-Kil did a lot of planning. First, a survey of the dumps was made to determine extent of infestation and number and location of rat burrows. Then warning signs were posted along the dump boundaries indicating poison baits were to be used.

Next step was the placing of baits. Working from 2 PM to 10 PM on a winter day when the thermometer slid to —18 degrees, Wil-Kil crews placed solid, non-freeze 1080 baits in rat burrows and feeding places. Turrie says that amounts of bait placed on initial visits varies according to estimated rat populations, but that it generally ranges between 25 and 50 pounds.

Care was taken in placing the baits so that no poisons were exposed on open ground surfaces or other spots easily accessible to pets or children.

Early Results Excellent

First day results were little short of amazing. Company officials reported that 600 rats were killed in the Marinette dump and about 300 in the Menominee heap. It was estimated that approximately 90% of the rats were killed in this first poisoning. The rats were particularly ravenous because winter dumpings on which they normally feed were frozen over. Approximately 1/3 of the rats died above ground, but it was necessary to dig into rat burrows to recover the remaining carcasses.

Follow-Ups Necessary

Commenting on the entire operation, Turrie revealed his company's methods in contracting for rodent control work in city trash and refuse dumps.

After the initial visit, regular follow-up inspections are carried out each month. Service needs are determined by the number of reactivated burrows and rat holes within a radius of 300 or 400 feet from the dump boundary. Observations are made as to the type of food rats are feeding on, as shown by partially eaten food scraps in or near rat runways, holes, and on the dump face itself.

Cost Estimate

To establish a fee for this service, Wil-Kil had to consider four important factors: (1) Selling cost, which involves contacting several city officials and selling the idea, in some cases, to three or four individuals; (2) Surveying to determine extent of infestation, which often means making night inspections; (3) Initial service, which means overfeeding estimated rat populations, cleaning up uneaten baits on the following day in areas other than the dump face, and disposing of rat carcasses; and (4) Time taken to obtain cooperation from local law enforcement officials in guarding the dump and posting dump approaches with suitable warning signs.

To assure himself that genuine control is being effected by Wil-Kil's monthly follow-up visits, Turrie has enlisted the cooperation of dump attendants who report each month whether or not rats have been seen. Local police officers make two or three in-

spections a month during night shifts, using their squad-car searchlights to locate scurrying rats which may have escaped extermination.

Wil-Kil has now begun to do similar work in many mid-western cities, including about 15 dumps in the Milwaukee area. Using this careful, methodical approach, their efforts exemplify the important role PCOs can perform in their own city rodent control programs.

Pest Control Does Not Endorse Any Product

There has been misunderstanding over a quotation that appeared in one of the advertisements run in this magazine. The quotation has been construed by some to be an endorsement of the product advertised.

Pest Control magazine does not put a seal of approval on, nor does it endorse any rodenticide, insecticide or piece of equipment advertised in it.

Every effort is made, however, to see the advertising pages of this magazine do not include any objectionable or improbable statements. Care is taken to be sure only reputable suppliers are represented.

James A. Nelson, Publisher

German Research Data Offered

Data on the development and manufacture of insecticides and fungicides in Germany has been made public by Research Information Service, New York City, publishers and translators of foreign scientific literature, in their Research Bulletin No. 53.

Entitled "Insecticides", the bulletin presents 30 abstracts of recent German patent applications and war-time research accounts. It can be had, free of charge, by addressing a request on company letterhead to Research Information Service, New York, N. Y.

PATENTS

RELATING TO PEST CONTROL

BY

DR. R. C. ROARK

U. S. Department of Agriculture

Copies of all patents can be obtained for 25 cents (no postage) sent to the Patent Office, Washington, D. C. In ordering a copy of a patent the number of the patent, the date, the name of the patentee, and the subject of the invention should be stated.

2,532,579 (Dec. 5, 1950; appl. Aug. 6, 1946). PEST CONTROL COMPOSITIONS CONTAINING BETA-ACYL ACRYLATES. John C. Thomas, Wilmington, Del.—E. I. duPont de Nemours & company, Wilmington, Del. —A pest control composition comprises in aqueous medium a wetting agent and, as an essential active ingredient therein, methyl beta-(p-chlorobenzoyl) acrylate.

2,532,681 (Dec. 5, 1950; appl. Jan. 19, 1946). **EXTERMINATOR PROTECTING DEVICE.** William J. Stover, Detroit, Mich.—This invention relates to a device for protecting rodent exterminating and like poisonous materials from unauthorized access.

2,532,916 (Dec. 5, 1950; appl. Jan. 23, 1947). **RATTRAP.** George J. Houston, Scranton, Pa.

2,533,953 (Dec. 12, 1950; appl. Sept. 8, 1947). **SPRAY GUN.** Donald J. Peeps, Toledo, Ohio—The De Vilbiss Company, Toledo, Ohio.

2,534,000 (Dec. 12, 1950; appl. Oct. 9, 1945). PROCESS FOR PRODUCING HYDROCYANIC ACID. Walter Coopey, Charleston, W. Va.—E. I. du Pont de Nemours & Company, Wilmington, Del.

2,534,008 (Dec. 12, 1950; appl. July 10, 1947). INSECTICIDAL PAPER-COATING COMPOSITIONS. George W. Fiero, Port Chester, N. Y., and Howard F. Seeland, Little Silver, and George H. Batt, Rahway, N. J.—Standard Oil Development Company —A non-alkaline insecticidal paper coating composition consists by weight of DDT, 20 parts; clay, 19 parts; suspending and wetting agents, 2.5 parts; octyl alcohol, 0.2 parts; chlorinated starch solution, 8.8 parts; and water, 50 parts.

2,534,229 (Dec. 19, 1950; appl. March 15, 1945). METHOD AND APPARATUS FOR DETECTING HYDROGEN CYANIDE. Homer W. Carhart and John A. Krynitsky, Washington, D.C.

2,534,380 (Dec. 19, 1950; appl. Aug. 8, 1947). **GARMENT BAG.** Nathan L. Schwartzman, Jersey City, N. J. Protex Products Company, Jersey City, N. J.

2,534,464 (Dec. 19, 1950; appl. Aug. 31, 1948). DOOR OPERATED ATOMIZING DEVICE. Thomas O. Marini, Audubon, and Leonard Onorato, Oaklyn, N. J.

2,534,465 (Dec. 19, 1950; appl. Oct. 17, 1949). DOOR OPERATED ATOMIZING DEVICE. Thomas O. Marini, Audubon, N. J.

2,534,699 (Dec. 19, 1950; appl. July 19, 1946). **ANIMAL EXTERMINATOR.** Richard J. Courter, Jewell, Kans.—This device destroys ground burrowing vermin.

2,534,926 (Dec. 19, 1950; appl. June 23, 1947). INSECTICIDE COMPRISING BENZENE HEXACHLORIDE AND TAR OILS. Newville F. Sea, Sumner, Wash. An insecticide comprises: tar acids and tar acid oils, 69 per cent; caustic soda, 2.5 per cent; rosin, 15 per cent; benzene hexachloride containing approximately 10 per cent of the gamma isomer of benzene hexachloride, 5 per cent; and water, 8.5 per cent.

2,535,000 (Dec. 19, 1950; appl. April 29, 1949). INSECTICIDAL COMPOSITION COMPRISING DDT AND METHOXYCHLOR. Robert A. Sturdy, Quincy, Ill.—Moorman Manufacturing Company, Quincy, Ill.—An insecticide composition contains as active ingredients 1 part by weight of DDT and from about 0.2 to 5 parts of weight of methoxychlor.

2,535,089 (Dec. 26, 1950; appl. Dec. 29, 1948). **INSECT REPELLENTS.** Melvin S. Newman, Columbus, Ohio, and Barney J. Magerlein, Kalamazoo, Mich.—Secretary of the Army—An insect repellent composition comprises a solution of the allyl ester of alpha-methyl - epoxy - cyclo-hexylidene-acetic acid in methyl phthalate.

2,535,052 (Dec. 26, 1950; appl. Jan. 11, 1949). **INSECT REPELLENTS.** Nathan L. Drake, College Heights, Md., and Charles M. Eaker, Affton, Mo. —Secretary of the Army—An insect repellent composition comprises the cyclopentyl ester of 2-oxo-cyclopentanecarboxylic acid in mineral oil.

2,535,802 (Dec. 26, 1950; appl. May 22, 1948). **LAMP VAPORIZER.** Philip Libson, Brooklyn, N. Y. — Helena Rubinstein Inc., New York, N. Y.—The invention has particular application as an exaporator of deodorants and perfumes and is constructed to accommodate dry volatile solid compounds.

2,536,231 (Jan. 2, 1951; appl. Jan. 11, 1945). APPARATUS FOR PRODUCING AIR-BORNE PARTICLES OF INSECTICIDE. William A. Simanton, O'Hara Township, Allegheny County, Pa.—Gulf Research & Development Company, Pittsburgh, Pa. —A container for liquefied-gas aerosols is described.

2,537,021 (Jan. 9, 1951; appl. Jan. 7, 1949). **INSECT REPELLENTS.** Paul D. Bartlett, Weston, and Sidney D. Ross, North Adams, Mass. — Secretary of the Army—An insect repellent composition comprises a solution of 1 - furyl - 2,2-dimenthyl - 1,3-propanediol in dimethyl-phthalate.

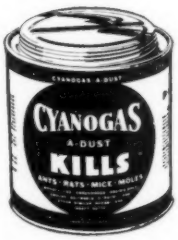
PCO's! CYANAMID PRODUCTS

▶Improve your services ▶Increase your profits

EFFECTIVE · PROFITABLE · EASY · EFFECTIVE · PROFITABLE

The most generally used fumigant

in the Pest Control industry is AERO* HCN DISCOIDS, Fumigant. More dwellings, industrial buildings, railroad cars, ships and stored commodities are fumigated with hydrocyanic acid gas than with any other fumigant. DISCOIDS are thin celulosic discs saturated with commercially pure hydrocyanic acid. One-pound and forty-ounce containers readily accommodate dosage requirements. AERO HCN DISCOIDS are simply scattered from the can. No dirt or mess in application or clean-up. Where insects and rodents are a problem in enclosed spaces, DISCOIDS provide the answer.



The ideal outdoor fumigant

CYANOGAS® A-DUST is excellent for "cleaning out" rat harborages in city dumps, sanitary fills, under sidewalks, tight floors and pavements, and in fields, along ditch banks and levees. Applied effectively and economically with the handy CYANOGAS FOOT PUMP.

Not a bait . . . CYANOGAS A-DUST liberates hydrocyanic acid gas in the burrow. Rats, adult and young, breathe the gas and die quickly. No dangerous residues left to be picked up by unwary children or pets. CYANOGAS A-DUST is ready for instant use and requires no further preparation.

For small-scale, economical, indoor fumigation

CYANOGAS® G-FUMIGANT, dustless, sea-sand size granulation of calcium cyanide, liberates hydrocyanic acid gas. The same positive fumigant but of lower strength than AERO HCN DISCOIDS. Unsurpassed for easy, economical fumigation of small storage buildings needing only low dosages of gas. (Not to be used in dwellings.)

*Trade Mark

We shall be glad to send you full information concerning any or all of these insecticides and rodenticides.

AMERICAN *Cyanamid* COMPANY

Agricultural Chemicals Division
30-W Rockefeller Plaza, New York 20, N. Y.

Branch Offices: 20 No. Wacker Drive, Chicago 6, Ill. • Brewster, Fla. • 1308 Donaghey Building, Little Rock, Ark.
111 Sutter St., San Francisco 4, Calif. • P. O. Box 808, Winchester, Va.

EASY · EFFECTIVE · PROFITABLE · EASY · EFFECTIVE · PROFITABLE

PROFITABLE · EFFECTIVE · EASY · PROFITABLE · EFFECTIVE

spections a month during night shifts, using their squad-car searchlights to locate scurrying rats which may have escaped extermination.

Wil-Kil has now begun to do similar work in many mid-western cities, including about 15 dumps in the Milwaukee area. Using this careful, methodical approach, their efforts exemplify the important role PCOs can perform in their own city rodent control programs.

Pest Control Does Not Endorse Any Product

There has been misunderstanding over a quotation that appeared in one of the advertisements run in this magazine. The quotation has been construed by some to be an endorsement of the product advertised.

Pest Control magazine does not put a seal of approval on, nor does it endorse any rodenticide, insecticide or piece of equipment advertised in it.

Every effort is made, however, to see the advertising pages of this magazine do not include any objectionable or improbable statements. Care is taken to be sure only reputable suppliers are represented.

James A. Nelson, Publisher

German Research Data Offered

Data on the development and manufacture of insecticides and fungicides in Germany has been made public by Research Information Service, New York City, publishers and translators of foreign scientific literature, in their Research Bulletin No. 53.

Entitled "Insecticides", the bulletin presents 30 abstracts of recent German patent applications and war-time research accounts. It can be had, free of charge, by addressing a request on company letterhead to Research Information Service, New York, N. Y.

PATENTS

RELATING TO PEST CONTROL

BY

DR. R. C. ROARK

U. S. Department of Agriculture

Copies of all patents can be obtained for 25 cents (no postage) sent to the Patent Office, Washington, D. C. In ordering a copy of a patent the number of the patent, the date, the name of the patentee, and the subject of the invention should be stated.

2,532,579 (Dec. 5, 1950; appl. Aug. 6, 1946). PEST CONTROL COMPOSITIONS CONTAINING BETA-ACYL ACRYLATES. John C. Thomas, Wilmington, Del.—E. I. duPont de Nemours & company, Wilmington, Del. —A pest control composition comprises in aqueous medium a wetting agent and, as an essential active ingredient therein, methyl beta-(p-chlorobenzoyl) acrylate.

2,532,681 (Dec. 5, 1950; appl. Jan. 19, 1946). **EXTERMINATOR PROTECTING DEVICE.** William J. Stover, Detroit, Mich.—This invention relates to a device for protecting rodent exterminating and like poisonous materials from unauthorized access.

2,532,916 (Dec. 5, 1950; appl. Jan. 23, 1947). **RATTRAP.** George J. Houston, Scranton, Pa.

2,533,953 (Dec. 12, 1950; appl. Sept. 8, 1947). **SPRAY GUN.** Donald J. Peeps, Toledo, Ohio—The De Vilbiss Company, Toledo, Ohio.

2,534,000 (Dec. 12, 1950; appl. Oct. 9, 1945). PROCESS FOR PRODUCING HYDROCYANIC ACID. Walter Coopey, Charleston, W. Va.—E. I. du Pont de Nemours & Company, Wilmington, Del.

2,534,008 (Dec. 12, 1950; appl. July 10, 1947). INSECTICIDAL PAPER-COATING COMPOSITIONS. George W. Fiero, Port Chester, N. Y., and Howard F. Seeland, Little Silver, and George H. Batt, Rahway, N. J.—Standard Oil Development Company —A non-alkaline insecticidal paper coating composition consists by weight of DDT, 20 parts; clay, 19 parts; suspending and wetting agents, 2.5 parts; octyl alcohol, 0.2 parts; chlorinated starch solution, 8.8 parts; and water, 50 parts.

2,534,229 (Dec. 19, 1950; appl. March 15, 1945). METHOD AND APPARATUS FOR DETECTING HYDROGEN CYANIDE. Homer W. Carhart and John A. Krynitsky, Washington, D.C.

2,534,380 (Dec. 19, 1950; appl. Aug. 8, 1947). **GARMENT BAG.** Nathan L. Schwartzman, Jersey City, N. J. Protex Products Company, Jersey City, N. J.

2,534,464 (Dec. 19, 1950; appl. Aug. 31, 1948). DOOR OPERATED ATOMIZING DEVICE. Thomas O. Marini, Audubon, and Leonard Onorato, Oaklyn, N. J.

2,534,465 (Dec. 19, 1950; appl. Oct. 17, 1949). DOOR OPERATED ATOMIZING DEVICE. Thomas O. Marini, Audubon, N. J.

2,534,699 (Dec. 19, 1950; appl. July 19, 1946). **ANIMAL EXTERMINATOR.** Richard J. Courter, Jewell, Kans.—This device destroys ground burrowing vermin.

2,534,926 (Dec. 19, 1950; appl. June 23, 1947). INSECTICIDE COMPRISING BENZENE HEXACHLORIDE AND TAR OILS. Newville F. Sea, Sumner, Wash. An insecticide comprises: tar acids and tar acid oils, 69 per cent; caustic soda, 2.5 per cent; rosin, 15 per cent; benzene hexachloride containing approximately 10 per cent of the gamma isomer of benzene hexachloride, 5 per cent; and water, 8.5 per cent.

2,535,000 (Dec. 19, 1950; appl. April 29, 1949). INSECTICIDAL COMPOSITION COMPRISING DDT AND METHOXYCHLOR. Robert A. Sturdy, Quincy, Ill.—Moorman Manufacturing Company, Quincy, Ill.—An insecticide composition contains as active ingredients 1 part by weight of DDT and from about 0.2 to 5 parts of weight of methoxychlor.

2,535,089 (Dec. 26, 1950; appl. Dec. 29, 1948). **INSECT REPELLENTS.** Melvin S. Newman, Columbus, Ohio, and Barney J. Magerlein, Kalamazoo, Mich.—Secretary of the Army—An insect repellent composition comprises a solution of the allyl ester of alpha-methyl - epoxy - cysclo-hexylidene-acetic acid in methyl phthalate.

2,535,052 (Dec. 26, 1950; appl. Jan. 11, 1949). **INSECT REPELLENTS.** Nathan L. Drake, College Heights, Md., and Charles M. Eaker, Affton, Mo. —Secretary of the Army—An insect repellent composition comprises the cyclopentyl ester of 2-oxo-cyclopentanecarboxylic acid in mineral oil.

2,535,802 (Dec. 26, 1950; appl. May 22, 1948). **LAMP VAPORIZER.** Philip Libson, Brooklyn, N. Y. — Helena Rubinstein Inc., New York, N. Y.—The invention has particular application as an exaporator of deodorants and perfumes and is constructed to accommodate dry volatile solid compounds.

2,536,231 (Jan. 2, 1951; appl. Jan. 11, 1945). APPARATUS FOR PRODUCING AIR-BORNE PARTICLES OF INSECTICIDE. William A. Simanton, O'Hara Township, Allegheny County, Pa.—Gulf Research & Development Company, Pittsburgh, Pa. —A container for liquefied-gas aerosols is described.

2,537,021 (Jan. 9, 1951; appl. Jan. 7, 1949). **INSECT REPELLENTS.** Paul D. Bartlett, Weston, and Sidney D. Ross, North Adams, Mass. — Secretary of the Army—An insect repellent composition comprises a solution of 1 - furyl - 2,2-dimenthyl - 1,3-propanediol in dimethyl-phthalate.

PCO's! CYANAMID PRODUCTS

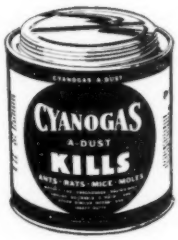
▶Improve your services ▶Increase your profits

EFFECTIVE · PROFITABLE · EASY · EFFECTIVE · PROFITABLE

EASY · EFFECTIVE · PROFITABLE · EASY · EFFECTIVE · PROFITABLE

The most generally used fumigant

in the Pest Control industry is AERO* HCN DISCOIDS, Fumigant. More dwellings, industrial buildings, railroad cars, ships and stored commodities are fumigated with hydrocyanic acid gas than with any other fumigant. DISCOIDS are thin celulosic discs saturated with commercially pure hydrocyanic acid. One-pound and forty-ounce containers readily accommodate dosage requirements. AERO HCN DISCOIDS are simply scattered from the can. No dirt or mess in application or clean-up. Where insects and rodents are a problem in enclosed spaces, DISCOIDS provide the answer.



The ideal outdoor fumigant

CYANOGAS® A-DUST is excellent for "cleaning out" rat harborages in city dumps, sanitary fills, under sidewalks, tight floors and pavements, and in fields, along ditch banks and levees. Applied effectively and economically with the handy CYANOGAS FOOT PUMP.

Not a bait . . . CYANOGAS A-DUST liberates hydrocyanic acid gas in the burrow. Rats, adult and young, breathe the gas and die quickly. No dangerous residues left to be picked up by unwary children or pets. CYANOGAS A-DUST is ready for instant use and requires no further preparation.

For small-scale, economical, indoor fumigation

CYANOGAS® G-FUMIGANT, dustless, sea-sand size granulation of calcium cyanide, liberates hydrocyanic acid gas. The same positive fumigant but of lower strength than AERO HCN DISCOIDS. Unsurpassed for easy, economical fumigation of small storage buildings needing only low dosages of gas. (Not to be used in dwellings.)

*Trade Mark

We shall be glad to send you full information concerning any or all of these insecticides and rodenticides.

AMERICAN *Cyanamid* COMPANY

Agricultural Chemicals Division
30-W Rockefeller Plaza, New York 20, N. Y.

Branch Offices: 20 No. Wacker Drive, Chicago 6, Ill. • Brewster, Fla. • 1308 Donaghey Building, Little Rock, Ark.
111 Sutter St., San Francisco 4, Calif. • P. O. Box 808, Winchester, Va.

PROFITABLE · EFFECTIVE · EASY · PROFITABLE · EFFECTIVE

Insect Pests in Cargo Ships[1]

a condensation of a bulletin
by

H. A. U. MONRO
Senior Officer
Fumigation Unit
Science Service Laboratory
London, Ontario, Canada

EACH YEAR thousands of unwelcome stowaways take free passage in the holds of the world's cargo ships. Each year these pests, in the form of insects and mites, damage or destroy thousands of tons of precious wheat and other grain cereals.

Sometimes these non-paying passengers are not present in large enough numbers to be noticed by the crew. Often, however, particularly when cargoes come from a tropical area, the ship may be so heavily infested upon arrival that even the most casual observer can detect an infestation.

When such cargoes are unloaded, they inevitably leave behind large pest populations which continue to breed and multiply in the residue of these and previous cargoes. The combination of a residual insect population and an accumulation of food debris in uncleaned cracks and crevices in the ship's hold, leads to an even greater pest problem in the next shipment.

Insect infestations in grain-carrying ships present three problems for the PCO who must tackle the control job: (1) A few insects may do a large amount of damage, especially if they are of that type which attacks only that part of the grain kernel which is richest in vitamin content. (2) Pest infestation may bring about considerable incidental loss to the product. In stored grain, for instance, a small focus of infestation may start a complex process of heating which spreads throughout the pile and brings about serious losses all out of proportion to the amount of food eaten by the insects themselves. (3) Over and above the problem of actual quanitative losses of valuable food, modern standards of cleanliness demand that food products be free of insect material, whether living or dead or in the form of remains and excreta.

Important Sites of Ship-Pest Infestation

Many features of construction in a ship's hold favor the establishment and increase of insect pest populations. All types of food materials, such as grains, cereals, nut debris, seeds and spices are pressed into crevices in cargo spaces during loading or transit. With bulk cargoes, a percentage of the material flows readily under pressure into these places, and can be removed only with great difficulty. With bagged and boxed commodities the usual spillage and breakage permits a large amount of material to enter crevices in the same manner. This accumulation allows unseen insect populations to increase even when no foodstuffs may be carried for years at a time.

Figures 4 and 5 are longitudinal and transverse diagrams to scale, showing the essential features of modern ship construction which have a direct bearing on this problem.

1. *Tank top ceilings*, (Fig. 4 and 5, "A") are used to protect steel double-bottom tanks lying beneath hatch openings, sometimes extending over the whole floor area. They may be termed *tank top sheathing* or *wood ceiling*. To permit water drainage, there is usually a space, up to two inches, between flooring and tank tops. As the steel floor usually slopes gently from the center line to the sides, water leaking in drains away into the bilges (Fig. 5). If, as often happens, cracks appear between ceiling boards, food material can be forced down into the underlying space and serve as a focal point of infestation for an indefinite period. Insects breeding in this space can move out to attack new cargoes

2. *Shifting boards* (Fig. 5, "B") are placed to prevent grain cargoes from shifting from one side of the ship to the other while at sea. These are longitudinal walls of boards built along the center line, (Fig. 4). Narrow spaces between these boards become clogged with grain and cannot be satisfactorily cleaned unless boards are taken down.

3. *Dunnage* and *rock ballast* are two important areas of ship insect infestations. Dunnage is defined as any material such as blocks, boards, paper and burlap necessary for safe stowage of cargo. Usually covered by this term is the collection of jute (burlap) bags often carried on board ships for bagging or "topping" part of a grain cargo, as well as jute separation cloths used to prevent grain seepage. In all this material accumulations of debris may persist for considerable lengths of time, forming a hiding and breeding spot for insects.

4. *Rock ballast* is found in many grain-carrying vessels which travel "light" on their outward journey. This ballast consists of small rocks and stones, which, when left in bilge spaces, may be-

[1]Condensed from Canadian Department of Agriculture Publication Number 855, "Insect Pests In Cargo Ships" by H. A. U. Monro.

come thoroughly impregnated with grain forced down through limber boards. Large insect populations can develop under these conditions, and control methods are difficult to carry out.

Other focus points of ship insect infestation are along the transverse beams and longitudinal deck girders, where excess grain may be lodged (Fig. 5 "C"); in insulating walls near the engine room (Fig. 4) where an extra wooden bulkhead is often erected to shield cargo from heat. These bulkheads are fitted loosely, with much room for insect life behind them. Spar ceilings (Fig. 5 "D") or the longitudinal planks which hold the cargo away from the actual hull of the ship, and the bilges (Fig. 5 "E") or, the space inside the rounded portion of the hull at the sides of cargo spaces, are also ideal lodging places for insects.

Additional hiding places for breeding insects can be found underneath wooden boxing, around pipes, crevices at intersections of overlapping hull plates, cracks in wooden ceiling protecting propeller shaft and beneath rusty scale and old paint on inside of hull plates.

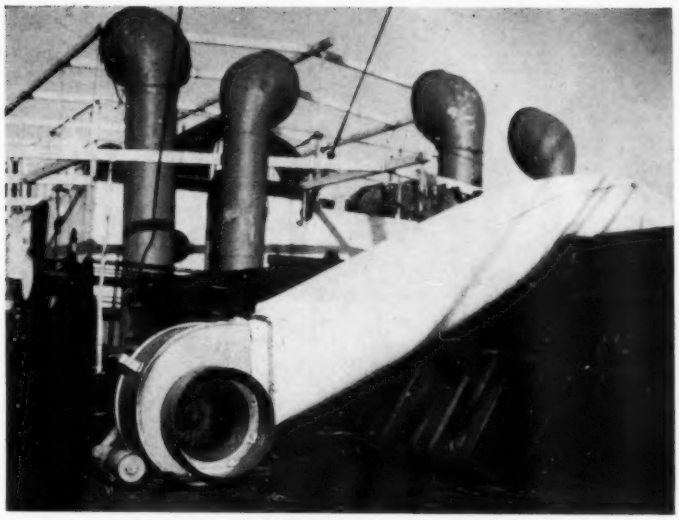
Insect infestation in a ship originates, usually, in the loading of contaminated material into one or more of the holds. It is doubtful, however, that insects would, of their own accord, crawl or fly into ships in sufficient numbers to establish large populations. Usually there is enough material left behind from an infested cargo to permit populations to survive for periods up to a number of years until another shipment of suitable food material is loaded.

More Common "Stowaways"

Insects and mites which infest cargo holds are characterized by their small size and inconspicuous appearance. They shun light and some species even feign death when discovered, thus making detection of active insects doubly difficult. Broadly speaking, these insects populations can be broken down into two distinct groups.

First are those insects which thrive in the holds of tramp steamers, vessels which wander throughout the world, chartering cargoes from one extremity of the

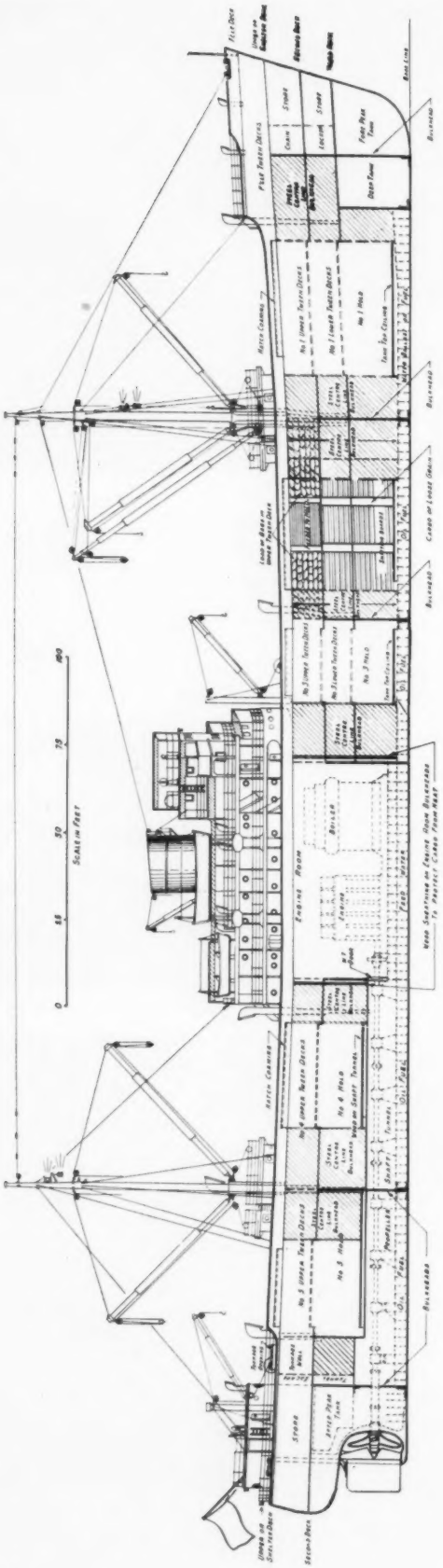
1.



2.

3.

1. Blower in operation during aeration process for speedier fumigant ventilation.
2. Tar paper sealing being applied over hatch covers, preparatory to fumigation.
3. Removing limber boards to search for accumulated food materials.



4. Longitudinal plan of typical ocean-going ship, this type being known as a "shelter decker"

earth to the other. More often than not these ships make harbor at some tropical port, where they pick up cargoes containing a large assortment of beetles and weevils, such as the red flour beetle, rice weevil, granary weevil, cadelle, and saw-toothed grain beetle.

In the second group, which infest steamers which have regularly scheduled runs between temperate zone ports, are mainly Lepidoptera (moths), primary examples of which are the meal moth, brown house moth, white-shouldered house moth and species related to clothes moths.

Chemical Control

Once insect populations are firmly established in a ship's hold, it is necessary to use a chemical toxicant to kill the pests by direct means. Choice of agent and method of application depend on many varying factors, and it must be remembered that cargo-ship pest control is a relatively new field and any recommendations given here may have to be altered or modified to keep pace with new developments. Success of chemical treatment lies not only in the chemical alone. Extensive control work on ships should be placed only in the hands of qualified pest control operators.

Insecticide sprays, from the standpoint of both ship's crew and the PCO, are the safest method of achieving adequate control. When sprays are used it is unnecessary to evacuate the ship, and sprays have the additional advantage, in many cases, of residual effect. However, they frequently fail to kill insects which remain hidden in the numerous cracks and crevices found on vessels.

Sprays are most frequently used when the infestation is not serious enough to require fumigation. Safest and most effective, at present, is pyrethrum, and it is recommended where more toxic sprays might prove injurious to foods stored in the holds. Oil and water sprays containing 5% DDT may be used in places not in contact with the cargo. However, DDT, lindane and chlordane, effective as residual insecticides, are not recommended when cargo holds are filled with foodstuffs.

Aerosols are intermediate in effectiveness between sprays and fumigation. For use in cargo spaces, aerosols can be produced by a number of devices, ranging from fog generators to insecticidal smokes. This method of control, however, while it works well against insects moving freely across open spaces, has not been able to penetrate the cracks between floorboards, tank-top ceilings, or limber boards.

Fumigation

Two fumigants commonly used in ship fumigation are HCN (hydrocyanic gas) and methyl bromide. Fumigants, because of their gaseous nature, naturally give far more effective control than either sprays or aerosols, but the disadvantages in using this technique are equally apparent. Apart from possible hazards arising from their use, the principal disadvantage of using fumigants is that usually the entire ship must be evacuated while work is being carried on, involving great expense for the ship's owners.

HCN, applied either from cylinders or by means of discoids, has been extensively used to control rats on ships and to prevent spread of bubonic plague. Under ordinary circumstances, dosages for rats would call for 2 ounces of HCN per 1000 cubic feet of hold space

USE THE SPRAYERS THAT ARE BUILT TO LAST!

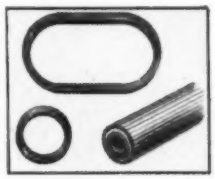
Stainless steel tank, pump, supply tube, oil- and chemical-proof hose. Also available with galvanized steel tank, brass pump. 2¾ or 4 gal. sizes.

FOR USE WITH CHEMICALS, DETERGENTS, OILS, SOLVENTS, INSECTICIDES

HUDSON INDUSTRO JR. Especially designed for longer service at lowest cost – for heavy-duty service where long life, extra discharge equipment, and rugged construction are highly important. Stainless steel model has stainless steel tank, pump, and supply tube. Extra-long (5 foot) high pressure oil- and chemical-proof hose, virtually impervious to most spray materials.

Easier closing, leak-proof cover seals from within — no screws, no clamps. Large opening for easy filling. Seam-welded tank. Tested to 100 lbs.

Seamless "Nu-Action" pump develops higher pressure with fewer strokes. Perfection Valve, air- and liquid-tight, impervious to spray chemicals.

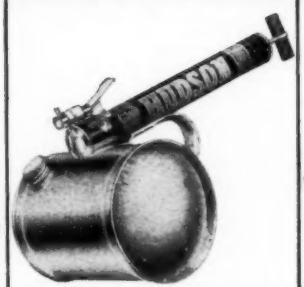


Oil- and Chemical-Proof Hose and gaskets. All brass, machined, non-clogging spray control valve. Four spray discs provided for any spray.

HUDSON MAKES A COMPLETE LINE OF RUGGED SPRAYERS

HUDSON LEKTRIK-SPRAY

3 quart stainless steel or 24-oz. glass container. AC/DC motor. Toggle or automatic time switch. Dual-purpose nozzle for either wet residual spray, or fine space spray.



HUDSON CAPITAL COMPRESSION SPRAYER

Premium quality galvanized steel tank, 2⅔ qt. "2-Spray" nozzle for either wet residual or fine space spray. Thumb lever gives instant control of discharge. Patented "Nu-Action" pump.

HUDSON CRITIC CONTINUOUS SPRAYER

Corrosion-proof 24 oz. glass jar. "2-Spray" nozzle provides wet residual or fine space spray at flick of finger. Standard fruit jar thread for easy interchanging of containers.

HUDSON PEERLESS POWER SPRAYER

Positive piston pump. Stainless steel ball valves in stainless steel cage. Oil- and chemical-proof hose. 250, 400, 500 or 800 lbs. pressure. 4 or 8 g.p.m. output. 30, 50, 100, 150 gal. tanks.

SIGN OF THE BEST BUY

HUDSON

H. D. HUDSON MANUFACTURING COMPANY
589 East Illinois Street, Chicago 11, Illinois

FREE . . . Get a free catalog showing the complete line of Hudson Sprayers. Write today.

for a period of 2 hours. But to control insects, at temperatures above 60 degrees F., dosages of HCN must be increased to 8 or 10 ounces per 1000 cubic feet for an exposure of 10 to 12 hours. It is not necessary, with this fumigant, to take extra sealing precautions on hatch-ways. Effectiveness of this remedy can be increased by placing fans with explosion-proof motors as an aid in distribution and penetration. At temperatures below 60 and down to 40 degrees F., however, this fumigant has not proved fully effective in reaching insects in crevices and has not obtained complete mortality of immature stages inside grain kernels.

Methyl bromide has outstanding powers of penetration, but will escape unless special precautions are taken for adequate sealing. Three canvas tarpaulins, covering each hatch-way, are sufficient to prevent its escape. One specially treated plastic tarp, resistant to methyl bromide, can do the job. If these are not available, it is advisable to lay down a sealing consisting of strips of tar paper, joined by brown paper and glued with flour paste along the surface of the hatches. An ordinary canvas tarp is then placed above this sealing. These special provisions are not necessary on ventilators, etc., ordinary canvas being sufficient.

Dosages of methyl bromide depend on existing temperatures, but above 60 degrees F. 1 pound per 1000 cubic feet for a period of 10 hours has been found to give satisfactory results. Again, the use of circulating fans is strongly recommended.

Aeration Of Fumigant

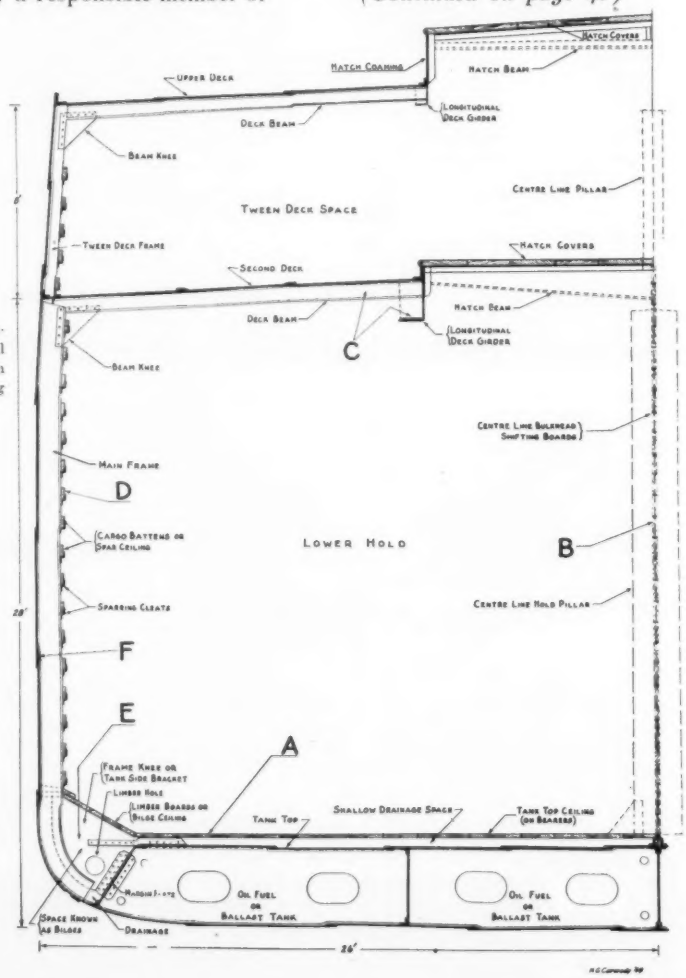
Experience has demonstrated that quicker aeration can be obtained, not by drawing out the contaminated air, but by blowing fresh air in. This method will not only introduce much fresh air, but will cause much turbulence also, increasing the possibility that gas will escape through hatches which may have been opened. Canvas ducts should be lowered by ropes from the blower into the hold, and when the air pressure inflates them, they should be rotated slowly by manipulating the ropes, to give uniform pressure. For effective operation, these blowers should have a capacity of at least 4,000 cubic feet of air per minute.

During the ventilation process it is necessary to make simple chemical tests from time to time. No one, except employees of the fumigation concern doing the work, should be allowed to enter the cargo holds until allowed to do so by the fumigator operator. Of particular importance is fumigation leakage into the engine and boiler rooms. These leakages usually allow only insignificant concentrations of fumigant to build up in those spaces, especially if the ventilators and skylights are left open. It may be necessary, however, for the ship engineer to attend to the boilers during a fumigation period, to prevent a complete loss of a head of steam. Under these circumstances, engineers should always be accompanied by a responsible member of the fumigation crew, who will make chemical tests for gas concentration while the engine crew is at work. A fumigator should remain with them during the entire time they are below decks.

Treatment Of Used Bags

As mentioned previously, used burlap (jute) bags, forming part of the dunnage, are a common source of infestation. These bags are often contaminated in the warehouse before delivery to the ship. There are various mechanical devices for recleaning these, such as suction machines. However, none of these mechanical methods will eliminate living insects of all stages, and fumigation in a suitable vault or air-tight enclosure is required. Fumigation at atmospheric pressure with methyl bromide is satisfactory for loosely piled bags. Infested bags or other dunnage found on board may often be fumigated with methyl

(Continued on page 49)



5. Mid ship section of typical cargo space in ocean - going vessel.

You profit three ways from LETHALAIRE®

1. Apply it yourself as a control for flying insects. You can't find a better product to do the job.
2. Sell it as a profitable item to your clients who are constantly troubled with flying insects, for use between your personal visits.
3. Suggest it as an opener with the prospect who now has a service contract. You not only make a profit, but a profitable connection.

Lethalaire is the trade-name for a number of highly effective aerosol insecticides and self-propelled sprays, developed specifically for large-scale application. There are two formulations which will be of great interest to the pest control industry. One is a space spray; the other a residual spray. Both are described in the column to the right.

COMPARE THESE FORMULATIONS

LETHALAIRE V-21, *a space spray,* has twice as much active ingredients as the ordinary aerosol, gives you higher knock-down and greater mortality with a smaller dosage. Because you use less material to get better results, your cost per application is very low.

The basic active ingredient of Lethalaire V-21 is Pyrenone, a new and revolutionary insecticide concentrate which combines pyrethrins and piperonyl butoxide. Lethalaire V-21 does not contain DDT. Lethalaire V-21 is non-injurious to humans and household pets when used as directed. It quickly knocks down and kills ants, spiders, fruit flies, blowflies, house flies, gnats, silverfish, fleas, moths, mosquitoes, cadelles, confused flour beetles, granary weevils, Mediterranean flour moths, Indian meal (chocolate) moths, cheese or ham mites and ham beetles.

Lethalaire V-21 is particularly recommended for use in restaurants, hotels, hospitals, canneries, bakeries, meat-packing plants, bottling plants, breweries, laundries, dry-cleaning plants, and in the clothing, rug and fur trades.

LETHALAIRE S-200, *a self-propelled residual spray,* contains one of the newer and more potent insecticides—Lindane. It offers proved long-lasting residual protection against flies, fleas, ants, flying moths and certain other insects. It clings to a surface which has been treated, killing the insects which come in contact with the surface. Lethalaire S-200 has another advantage—it will kill DDT-resistant flies. It is the perfect residual spray for use in garbage disposal areas, dairies, kennels, dry-cleaning establishments, hotels, institutions and for the clothing, rug and fur trades.

WRITE TODAY FOR FULL DETAILS! GET IN ON THE GROUND FLOOR OF THIS PROFITABLE, *EXTRA* BUSINESS! YOU CAN MAKE MONEY WITH LETHALAIRE!

VIRGINIA Chemicals

NATIONAL PEST CONTROL ASSOCIATION

VIRGINIA SMELTING COMPANY
WEST NORFOLK, VA.
DEPT. PC

Notes From Washington . . .

NPA Issues Change Of Ownership Priority Ratings

National Production Authority has issued NPA Regulation 6, which spells out conditions under which a company's priority ratings, materials quotas and other authorizations may be transferred, along with other assets and obligations, when sold as a going concern to a new owner.

When a purchaser of a going concern continues to operate it as substantially the same business and at the same location, he acquires all the privileges which NPA granted to the former owner. He is likewise subject to the same obligations and limitations.

However, if the new owner discontinues operation of the business, or uses it for a substantially different purpose, or in different location, he may not continue to use the former ratings and quotas for any purpose without prior written consent from the NPA.

NPA states additionally that with any business not sold as a going concern, no transfer of ratings, quotas and authorizations may be made without official action by the government agency.

Askins New Deputy Director NPA Materials Division

Now filling the post of deputy director of National Production Authority's Materials Division in the Office of Civilian Requirements is Jack W. Askins.

First joining NPA in March, 1951 as assistant to the director of construction machinery division, Askins formerly represented several New York manufacturing firms specializing in oil field equipment.

Place '52 Container Orders Early, NPA Tells Pesticide Producers

Early placement of 1952 shipping container orders will avoid serious disruption of pesticide distribution in the coming year, the National Production Authority advises.

NPA warns manufacturers that because of the acute shortage of steel and steel shipping containers, they should plan to spread their shipments over as wide a period as possible, and make the greatest possible re-use of containers.

Shortages are further aggravated, NPA officials disclose, by expectations that requirements for pesticides in 1952 will be considerably larger than they were in 1951. Producers are being urged to draw up their 1952 production and distribution plans now, so efforts can be made to meet their requirements.

Kilpstein Gets New Post; Curtis Resigns

New assistant administrator of the National Production Authority's chemical, rubber and forest products bureau is Kenneth H. Klipstein.

Formerly director of NPA's chemical division, Klipstein replaces Francis J. Curtis who resigned in November to return to his duties as vice-president and director of Monsanto Chemical Company, St. Louis, Mo.

Klipstein, who is on leave as head of the technical department of Calco Chemical Division, American Cyanamid Co., Bound Brook, New Jersey, first joined NPA as chemical division deputy director in March, 1951. He was appointed divisional director in May, 1951.

Lawrence W. Strattner, administrative vice-president of the West Virginia Pulp and Paper Co., New York, has been named as Klipstein's deputy administrator.

NPA Seeks To Avoid Direct Chemical Allocation Plan

National Production Authority officials are seeking ways to avoid the direct allocation of scarce chemicals, it was disclosed at a recent press conference in Washington.

Although machinery does exist for direct control under allocation order M-45, officials emphasized that thinking is now more towards end-use limitation orders, such as being planned for sulphur and sulphuric acid. It was pointed out that using this method of allocation would mean less paper work, less loss of time and smoother distribution of materials.

Elect New NPCA Regional VP's, Directors

Active members of the National Pest Control Association chose the following men to begin serving as their regional representatives at the close of this year's NPCA Convention, October 29-31, in Boston. In each instance, the first named is regional vice-president, while the others are regional directors. Asterisks denote newly-elected officers:

Region One: (Maine, Vt., N. H., Mass., Conn., all counties north of Westchester in New York, and Rhode Island) *Charles W. Houghton, Boston, Mass. (1953); *George W. Dyar, Hartford, Conn. (1953); *Mark Weintraub, Boston (1952); and I. B. Carncross, Syracuse, N. Y. (1952).

Region Two: (New York City and all Long Island and Westchester, N. J.) John K. Medoff, West New York, N. J. (1952); *Jacques J. Hess, New York, N. Y. (1953); *Charles Pomerantz, New York, N. Y. (1953); Fred J. Bowers, Rahway, N. J. (1952); and *Justin Simon, Brooklyn, N. Y. (1952).

Region Three: (Penn., Md., Dela., and D. C.) *Martin T. Meyer, Philadelphia, Pa., (1953); *Alva H. Bender, Washington, D.C. (1953); and A. E. Ritt, Philadelphia, (1952).

Region Four: (W. Va., Va., N. C., S. C., Ga., and Fla.) Herman L. Fellton, Atlanta, Ga. (1952); *Glenn H. Burnett, Atlanta, (1953); and *Mrs. Fred A. York, Atlanta, (1952). **Editor's Note:** Mrs. York is the first woman ever named to an official post in the National Pest Control Association.

Region Five: (Tenn., Ala., Miss., La., and Ark.) *Walter B. Hill, Memphis, Tenn. (1953); *G. L. Edwards, Jackson, Miss. (1953); and L. S. Bridges, Baton Rouge, La. (1952).

Region Six: (Ill., and Ind.) Arden W. Price, Chicago, Ill. (1952); *Russell G. Clark, Chicago (1953); and Dr. Lee C. Truman, Indianapolis, Ind. (1952).

Region Seven: (Mich., Ohio and Ky.) *Harlem H. Ives, Detroit, Mich. (1953); *Harry E. Studier, Cleveland, O. (1953); Herman C. Militzer, Toledo, O. (1952); and *Jess L. Purdy, Hamilton, O. (1952).

Region Eight: (Minn., Wisc., Iowa and Mo.) William J. O'Reilly, Minneapolis, Minn. (1952); *Charles Denny, St. Louis, Mo. (1953) and Morton J. Levy, St. Paul, Minn. (1952).

Region Nine: (N. Dak., S. Dak., Neb., Kan., Mont., Wyo., Colo., and Utah) *Maurice Oser, Denver, Colo. (1953); *Reynold Shuyler, Kansas City, Kans. (1953); and *Robert R. Schendel, Topeka, Kans. (1953).

Region Ten: (Ariz., N. Mex., Texas and Okla.) C. A. Trimbos, Dallas, Texas (1952); *H. O. Abel, Houston, Texas (1953); and K. C. Bell, Amarillo, Texas (1952).

Region Eleven: (Calif., Nev., and Hawaii) *J. Wilfred Gunn, Los Angeles, Calif. (1953); *Robert B. Mesecher, Burbank, Calif. (1953); and E. A. Alderman, Santa Barbara, Calif. (1952).

Region Twelve: (Wash., Oregon and Idaho) George Atchison, Tacoma, Wash. (1952); *Mel Ludington, Everett, Wash. (1953); and *Claude M. Snow, Portland, Oregon (1953).

Region Thirteen: (This region comprises all members outside continental U.S.A. except Hawaii and shall be represented on the Board by the President of the Canadian Pest Control Operators Association.) Jack Rudick, Director, Montreal, P. Q., Canada (1952).

Booth Exhibitors At NPCA Meet

Thirty exhibits, representing leading manufacturers and distributors of pest control supplies were set up in a hall off the main meeting room of the Boston NPCA Convention. A list of exhibitors follows, with what was displayed and who was on hand to represent the company.

Booth No. 1. **Pest Control Equipment**

(Continued on page 36)

for good PEST CONTROL in the food industry

CLEAN UP

The most important requirement for good pest control in the food industry is a good sanitation program—with routine, continuous inspections and cleanings. Without thorough cleaning of the premises to cut down the number of insect breeding places, no insecticide or combination of insecticides can give adequate pest control.

...and SPRAY

As a part of the regular cleaning program there is a definite need for—

- **space or contact sprays** to kill insects uncovered during inspections or cleaning operations
- **residual insecticides** to prevent reinfestation after premises have been cleaned.

Insecticides based on Pyrenone are available to do either job—and do it well. Pyrenone controls a wide range of food insects. And Pyrenone leaves no hazardous residues—employees do not need special clothing or other precautions to use it.

For further information on Pyrenone insecticides—how to formulate them or where to buy them—write today to U.S. Industrial Chemicals Co. Division of National Distillers Products Corporation, 60 E. 42nd St., New York 17, New York. In Canada: Natural Products Corporation, 738 Marin Avenue, Montreal, Canada.

FROM FARM TO FINISHED PRODUCT — Pyrenone helps the food industry keep insects out. It's used in Pyrenone Grain Protectant for stored grain, in box car sprays, box car liners, insect-resistant paper bags and boxes, dairy sprays, aerosols, and sprays for food plants and warehouses.

Pyrenone*

*Reg. U. S. Pat. Off.

23. **German Cockroach** — One of worst species of cockroach. Small, tan, about ½" long. Lifespan is 2 to 5 months and there are 2 or 3 generations a year.

24. **American Cockroach** — Large, brown insect, 1½" or longer. Females lay eggs in capsules which contain about 14 to 16 eggs each. Lifespan sometimes reaches 2½ years. Often abundant in restaurants, packing houses, bakeries, food stores, etc.

25. **Oriental Cockroach** — Considered filthiest of all roaches. Large, uniformly black insects, about 1" long. Females are nearly wingless. Life cycle is approximately 13 months. Females lay about 200 eggs. Usually found in damp basements.

PEST CONTROL

notebook

by Jack Ratcliffe

Wanted: Established Pest Control Business

So you want to buy the business? Be very cautious. Unless you know exactly what you are doing, your best bet is to start from scratch and slowly build your own from the ground up.

Start From Scratch: In most instances I have known, the purchase was a failure. Buyers would have been far ahead had they started from zero.

Owners Overestimate Value: Most owners of small or average firms have a bloated and vague estimate of the sale value of their holdings. Just because the original owner has made a good living from the business doesn't in the least mean a new owner can do the same. In fact, the success enjoyed by the original owner was built directly around his own personality and contacts. Mere sale doesn't transfer loyalty of the customers to the new owner.

Intangible Assets The Principal Values: In most deals tangible assets such as materials, equipment and property seldom amount to much. Everything depends on intangible values that are very difficult to evaluate. Does the business have steady customers it can hold indefinitely, or at least for sufficient time for new ownership to get established? Is the firm name and location sufficiently well established and advertised to draw a minimum of new trade? Is the personnel adequately trained and trustworthy to carry on until the new owner at least has time to learn his way around?

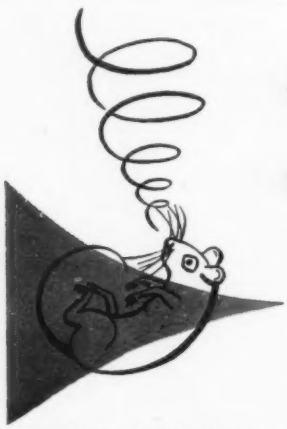
Organization : Organization, that is trained personnel, is an intangible quantity that is more often a threat to the new buyer than an asset.

One pitiful instance was brought to my attention just recently. A small firm sold for around ten thousand dollars. The one permanent employee had been servicing all the regular commercial maintenance accounts. In fact, he himself has signed up about 40% of them. For over five years the customers never saw anyone but this one man. To them he was the company. He not only did the work, but even made many of the collections. The owner specialized in "desk generalship" and an occasional termite job.

Soon after making the purchase, the new owner caught the employee cheating and inadvisedly fired him for cause. That started the fireworks. Within three months 75% of the customers had transferred their accounts to the former employee. The employee had no legal obligation restricting his right to solicit these accounts and the accounts had no legal or moral obligation to the new owner. They liked the erstwhile employee and they liked his work. Poof—both income and organization were gone.

Liabilities: Does the purchase you are considering have hidden debts or liabilities? A buyer must

(Continued on page 42)



TRY THIS EASY WAY
to kill RATS and MICE
IN BURROWS AND BUILDINGS

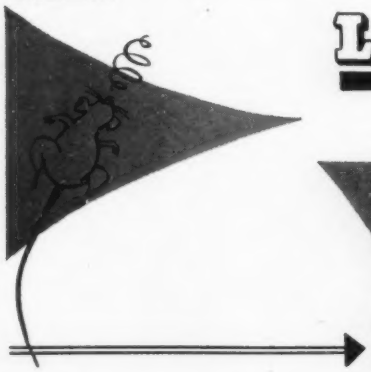
LARVACIDE brings rats out onto the open floor to die without carcass nuisance. LARVACIDE-treated burrows usually fall in from disuse before rehabitation. Easy and economical to use, LARVACIDE is chlorpicrin (tear gas). Available in one-lb. bottles (in hermetically-sealed cans) or in cylinders.

NOTHING TAKES THE PLACE OF LARVACIDE IN EFFECTIVE RODENT CONTROL!

Larvacide
CHLORPICRIN

AEROSOL LARVACIDE

Larvacide with equal weight of methyl chloride liquefied gas discharges under own pressure into fog. Simplifies space fumigation application. **Write for technical information.**

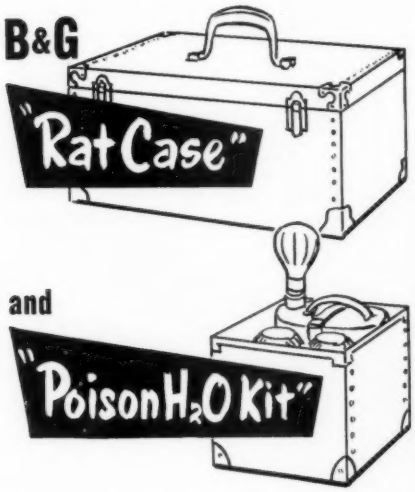


Repel Rats & Mice with the Larvacide Wick Bottle. Gives off traces of tear gas. Effective in buildings, storage, walls and corn cribs. **Send for interesting leaflet.**

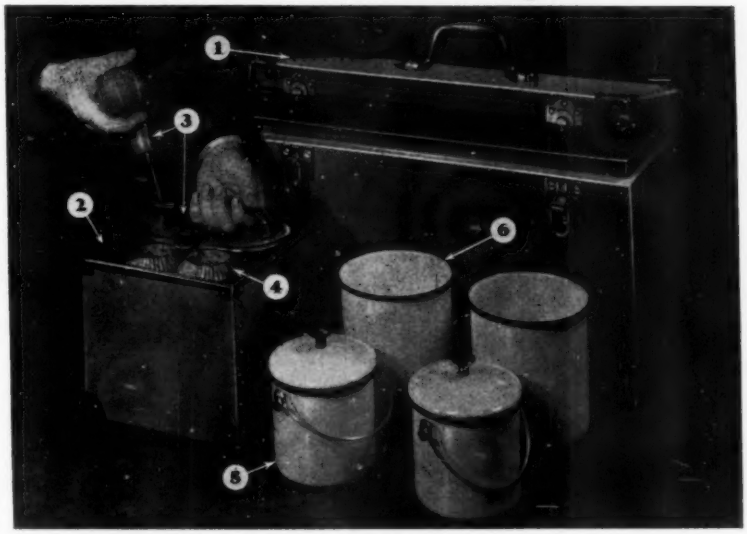
ISCO™

INNIS, SPEIDEN & CO. INC.
117 LIBERTY STREET NEW YORK 6, N. Y.
CHICAGO • CINCINNATI • CLEVELAND
SAN FRANCISCO • BOSTON • OMAHA • LOS ANGELES
SUBSIDIARY: E. S. BROWNING CO. INC. SAN FRANCISCO • LOS ANGELES

ANNOUNCING



new convenience for the Rat Control Expert!



Designed on the simple principle of keeping all your **tools** in one basket. No more looking for equipment, no more extra pieces to carry. Here it is, designed for your convenience by professionals, engineered specifically for the quick, easy, safe dispensing of hazardous rodenticides:

complete! professional!

"Poison H_2O Kit"

B & G Poison H_2O Kit, which includes items 2, 3 and 4, is complete in itself $12.90
(f.o.b. Phila.)

B & G "Rat Case"

Equipped with Poison H_2O Kit. Items 1 to 6 ..... $28.75
(f.o.b. Phila.)

(Makeup and prices subject to change without notice)

1. **Carrying Case:** Sturdily constructed of hard vulcanized fibre, varnished inside and out. Steel cloverleaf corners, 2 drawbolt catch, 3 hinges, special interior partition assembly. Size **20½ x 10¾ x 11½ in.**

2. **Poison H_2O Kit Carrying Case:** Sturdily constructed of hard vulcanized fibre, varnished inside and out.

3. **Rubber jug with filler bulb,** 100% unbreakable, made of flexible rubber, not hard or brittle, may be dropped or otherwise abused without injury. Even freezing will not harm either the rubber jug or filler bulb. Very light and evenly balanced. Approximate size is only 8 x 8 inches, yet it holds approximately 1 gallon of water.

4. **One hundred Rat Jigger Rodenticide containers,** with built-in safeguards. Efficient and economical to use.

5. **Two heavy duty bait buckets,** enameled inside and out, with cover, 1 quart capacity.

6 **Two Bait Buckets:** Heavy duty enameled inside and out, 2 quart capacity.

manufacturers and distributors of pest control products

B & G COMPANY

4725 RISING SUN AVE., PHILADELPHIA 20, PA.

"Serving the Pest Control Industry"

Overshadowing ALL Others!

TERRA TOX 255

ONE GALLON MAKES 11 GALLONS

Ready-to-Use 5% PENTA Oil Solution
that Means Lasting Protection from Termites!

Did you Know that there is a TERRA TOX for every Termite and Powder Post Beetle problem?

●

WRITE US TODAY and we'll send you informative, illustrated booklets on application and sales!

BIGGER concentration . . . BETTER results with TERRA TOX 255, the powerful 10-to-1 concentrate that means more sales for PCO'S! You get lasting results for ground or wood treatment of termites with TERRA TOX 255 because it contains Pentachlorophenol. Thrifty . . . and easy to use! Step up your pest-control business with TERRA TOX!

WOOD-TREATING Chemicals Co.
5137 SOUTHWEST AVENUE
SAINT LOUIS 10, MISSOURI

A Section of PEST CONTROL magazine

TERMITES

and other enemies of wood

Consultants: Dr. Thomas E. Snyder, Washington, D. C.; George L. Hockenyos, Springfield, Ill.; A. H. Bender, Washington, D. C.; R. B. Mesecher, Burbank, Calif.; J. Wilfred Gunn, Herbert R. Packard, Karl Hassler, Los Angeles, Calif.; Dr. Ira Hatfield, St. Louis, Mo.; Dr. E. H. Behr, Memphis, Tenn.; H. R. Isherwood, St. Louis, Mo.; J. L. Howell, Houston, Texas; Jack Ratcliffe, Tampa, Florida; Stanley L. Lind, Chicago, Ill.; W. K. Delaplane, Jr., Champaign, Ill., Fred J. Bowers, Rahway, New Jersey. The information in this section does not necessarily reflect the opinion of these termite consultants and they will assume no responsibility for articles other than those which bear their names.

Slab-Type Construction Revealed As Headache To TOs At NPCA Boston Meet

One of the biggest problems facing termite operators today is effectively controlling termites in new slab-type home construction, delegates to the termite session at this year's National Pest Control Association Convention in Boston were told. Emphasis was placed, too, on the effectiveness of the newer termite chemicals such as chlordane, DDT, lindane and dieldrin and the manner in which TOs should submit contract when bidding for government work.

St. George Gives Progress Report

R. A. St. George, U. S. Department of Agriculture entomologist at Beltsville, Maryland, leading the session talks with his "Progress Report on the Newer Termite Chemicals" drove home the idea that "soil poisons are most effective when used in combination with structural modification." Where plants and trees may be endangered by use of such soil poisons, he cautioned termite operators that in many cases, toxic materials reach plant roots by traveling along the outside of underground water pipes.

Research-wise, St. George described the tests now being made at Beltsville on such newer termite chemicals as DDT, lindane, chlordane, dieldrin, and aldrin. Tests on these materials have been under way for only two years, and although in many cases promise is shown for the material, St. George was reluctant to draw any definite conclusions as yet.

Four outstanding termite men gave their audience the basic 1-2-3-4 principles of termite control following St. George's remarks. J. Wilfred Gunn, speaking on "Mechanical Alterations" reminded his audience that termite control is a national problem, and that what may work in one part of the country may well prove fruitless in another. "Our biggest problem," he indicated, "is moisture control. Piles of debris are one of the chief offenders in this instance for they tend to keep the moisture from natural evaporation. Removing this debris, together with proper grading and correct placement of drain tile, and most importantly, breaking the wood-soil contact, can help to alleviate the dangers of moisture in soil. Inaccessible areas, often not included on the original blue-prints, must be found and examined closely," he said, "if the termite operator wishes to do a complete and thorough job."

"The second step in effective termite control," Jerome L. Howell declared, "is the establishment of a barrier between wood and soil." Howell, who is associated with the Howell Termite Control Co. in Houston, Texas, stressed the importance of "knowing your soil." "Soil can be broken down into groups — weathered rock or weathered plant remains, the first being inorganic, the latter organic. They can be further classified as gravels, coarse or fine sand and finally as silts or clay. Most soils," he admitted, "occur in combinations, but any soil supporting vegetation must be at least partly organic." Temperature changes, he warned, have a great effect on the rate of evaporation, and these changes, together with texture of the soil must be considered when applying a termite chemical as a soil poison.

(The first part of Mr. Howell's talk appeared in the November issue of Pest Control, page 31. The concluding section appears in this issue, page 26.)

Unable to be on hand personally, George L. Hockenyos, outstanding contributor to "Approved Reference Procedures For Subterranean Termite Control" sent his talk on "Foundation Treating" to be delivered by William K. Delaplane of Illini Pest Control & Service, Inc., Champaign, Illinois. Delaplane indicated that experimental work on foundation treating is almost entirely lacking, and that choice of toxicants used is still based largely on practice. He found that toxicants in voids, to be effective, should be in the vapor state, and that some success had been achieved in this method with NC crystals. Speaking for Hockenyos, Delaplane concluded, "termite operators would render a valuable service to their industry by looking for situations which called for foundation treatments alone, so that value of the toxicant could be properly judged."

The last step, "Wood Treating," is often overlooked by termite operators, said speaker Fred J. Bowers, of Bowco Laboratories, Rahway, New Jersey. He emphasized that this final step is used only for the killing of live termites in wood. He advised listeners that in many cases in modern construction where double-heads are used to keep walls from

tilting, it may be necessary to drill through a sound plank in order to reach the area of suspected infestation.

Government Bids

The cold, hard facts of bidding on a government contract and getting it were served up to Monday afternoon attendees in an extemporaneous talk by J. Wilfred Gunn. "All government work," he observed, "must be submitted to bid, and companies obtaining contracts must be bonded. If you are going to need the services of other trades, you must itemize these trades in preparing your bid and sub-contract the work." Gunn propounded seven expenses to consider in preparing such a bid: (1) investigation and testing to determine extent of infestation; (2) out-of-town subsistence for workers; (3) labor supervision; (4) clean-up; (5) equipment rental; (6) payroll and fire insurance and (7) bonding, which is usually 1% of the total bid. Again and again he repeated that estimates must be based on cost alone, and then overhead expenses and profit margin added.

Slabs Difficult Problem

Panel members on the afternoon's termite forum found they were traveling a bumpy road indeed when they ran smack into the problem of termite treatment in the new slab-type home construction. Trying to advance solutions to an admittedly complex question were A. H. Bender, Bender Termite Control Co., Washington, D. C., Fred J. Bowers, Dr. Ralph E. Heal, William K. Delaplane, Robert B. Mesecher, Bob's Termite Control Co., Burbank, Calif., J. L. Purdy, Extermital Termite Service, Hamilton, Ohio, R. A. St. George, Myron W. Smith, Hill-Smith Termite Control Co., Memphis, Tenn., Dr. Thomas E. Snyder, renowned termite authority and columnist for Pest Control magazine, and Dr. Avery S. Hoyt.

"The problem is far from an easy one," Myron Smith remarked, "and will probably get worse before it gets better. One of the principal dangers of slab construction is that the fill beneath it, if there is any fill at all, settles and often causes the concrete slab to crack. In slabs of the expansion-joint type, partition walls are frequently set right over the joint, thus giving easy access to termites when expansion joints open." Smith cited one case where during drilling in slab construction, membrane water-proofing was encountered, and the oil solvent in the chemical being applied dissolved the tarry waterproof materials and caused $1700 worth of stain damage.

Al Bender remarked that radiant heating in slab-type construction was proving an even bigger headache, and the termite operators in his area were more worried about it than about termites. In a postscript to his own words, Bender advised his fellow delegates not to "guarantee" a job, but rather to give "service."

HOW DOES WOOD DECAY?

By HOWARD OLSON
Chapman Chemical Co.

▼

Part Two

TYPES OF FUNGI

Wood-Rotting Fungi

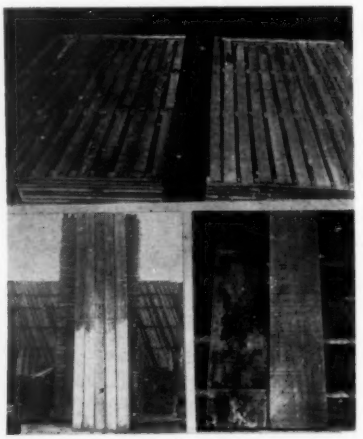
Oftentimes fungi, which attack the wood of living trees, cease to act when the tree is sawed into lumber. Such a fungus is found in catalpa, one of the most durable woods when cut, but this fungus destroys the heartwood of living, growing catalpa trees causing them to be hollow-hearted.

The prevalent notion that there is a type of fungus called "dry-rot", which will attack dry lumber, is erroneous. Actually the term "dry-rot" is a misnomer since all fungi are powerless to affect thoroughly dry timber. Likewise they are unable to spread through wood unless adequate moisture is available. Once their development has begun, however, these fungi are able to spread for a considerable distance in the dry portions of wood. This is possible because these fungi maintain themselves by obtaining water for their needs from the moist areas through porous root-like strands.

Dry rot is particularly to be dreaded because it works unseen within the walls, casings, and other hidden portions of buildings, and its presence is often unknown until some portion of the building collapses.

Wood-Staining

Frequently people will classify blue-stained wood as rotten. These staining fungi even though they will discolor the sap wood, do not in general do any other harm. They do not affect the strength of the wood seriously. For general purposes sap-stained lumber is entirely serviceable provided the discoloration is not objectionable. An important point



Examples of stain control obtained with the aid of some of the newer chemical treatments. Figure A: Pine piles with dipped (right) and undipped (left) lumber at the end of 90 days seasoning. The marked contrast in stain development indicates what can be accomplished with chemical treatment. Figure B: Red gum sapwood boards, half portions of each of which were dipped and the remainders left untreated. This is a simple way of demonstrating treatment effectiveness. Figure C:. Treated and untreated red gum sapwood boards taken from comparable positions in adjacent test piles after seasoning for 120 days.

Photo by Bureau of Plant Industry, Soils and Agricultural Engineering, U.S.D.A.

to remember in connection with sap stain fungi is that conditions favoring development of the harmless staining fungi are also conducive to infection and subsequent deterioration by decay producers.

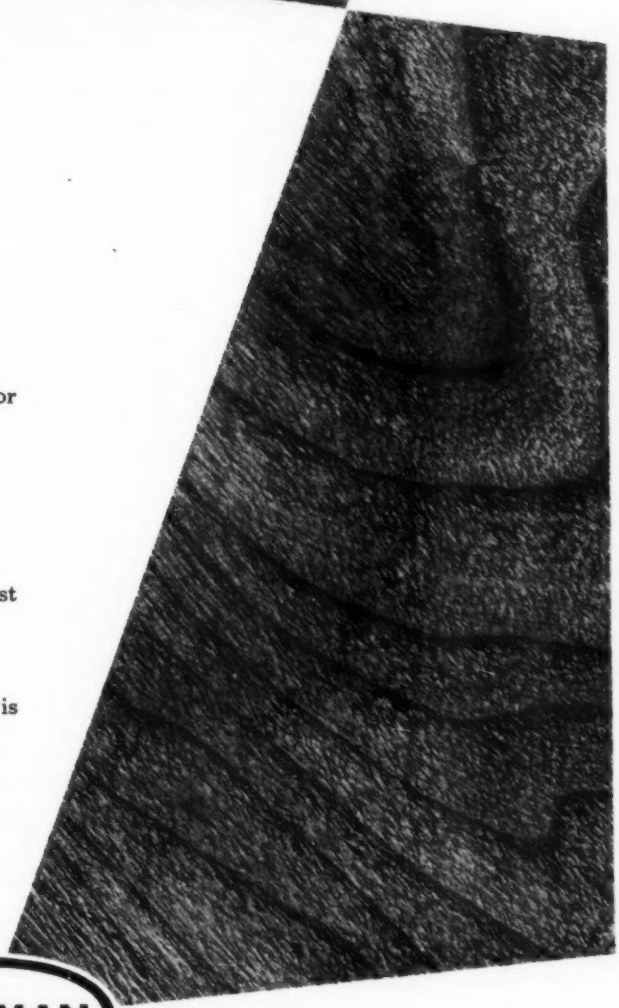
Staining fungi are able to live on starches, sugars, etc. found in sap wood cells, so it is not necessary for them to attack the cell wall for food.

True molds similar to those that form on damp bread or cheese, thrive on the surface of wood in the presence of abundant warmth and moisture. Since molds are mostly confined to the surface of wood, penetrating the cells only slightly, they can usually be dressed off or removed by scraping. Here again, however, conditions favoring mold growth are also ideal for the development of wood rotting fungi. So if you spot mold, check for soft, punky, decayed wood.

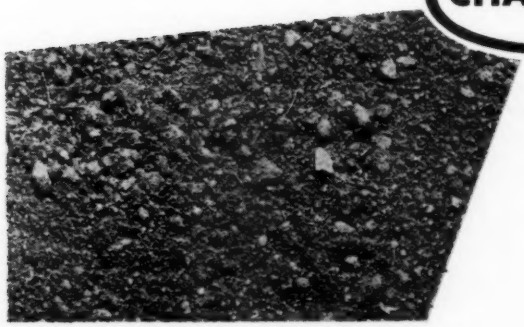
(Continued on page 43)

In the wood or in the ground....

Penta Preservative, because it is an oil solution, does not wash out of the ground or leach from the wood. It's practically insoluble in water; it would take about 7,000 gallons of water to dissolve 1 pound of technical penta. Oil solutions of Penta are many times more insoluble than this. Termites simply cannot pass through the long-lasting Penta barrier. For the most economical source of ready-to-use solutions, specify Penta Preservative Concentrate 1 to 10. It's ideally suited for cold weather operations—the concentrate is stable to 0° F. Practically odorless and clean to handle, Penta Preservative will make your termite control jobs positive—and profitable. Your order will receive prompt shipment from the nearest Chapman warehouse.



CHAPMAN®



CHAPMAN CHEMICAL COMPANY

707 Dermon Building • Memphis 3, Tennessee

Importance Of Soils In Termite Control

by

Jerome L. Howell

Part Two

How Subterranean Termites Can Obtain Their Moisture Supply

Does the average termite operator in analyzing a termite infested job, and laying out his plans for correction, look upon the moisture supply seriously enough? And how they could obtain this moisture? Or realize just how much moisture we have to contend with? Yet we all know how dependent termites are upon moisture.

It is recognized that any porous material will have a capilllary action, or the voids in the material are filled with air which forms a suction and will draw moisture from the air to themselves. By taking a piece of apparently dry wood and weighing it, then place it in an oven at approximately 200 degrees Fahrenheit for 3 or 4 hours, or until it ceases to lose any appreciable amount of weight and then re-weighing, you will find that it has lost from 20 to 25% of its weight — which was evaporated water. This same piece of wood can absorb from the air up to 40% of its weight in water. Since one 2x8x9 feet long dry yellow pine contains one cubic foot of wood, weighing 38 lbs., if it contains 40% moisture, it would have 15.20 lbs. of water. At 8.34 lbs. per gallon, it would contain 1.83 gallon or close to 2 gallons of water in one joist 9 ft. long. So, it can readily be seen that there is a surprising amount of water contained in timbers in the under side of a damp house.

Now, again, you can take a dry soft brick, a concrete block, a piece of poured concrete, or nearly any of our building units — first weigh them dry, then immerse them in water, again weigh them, and you will find that they will take up nearly half their weight in water.

If we take a house for instance, in the Spring of the year, when the ground is filled with moisture and soggy, possibly the ground underneath unexcavated and wet, with insufficient ventilation to assist in drying it out, you will find that this porous foundation is drawing water from the surrounding ground to itself, and will carry a high degree of moistue. You will find the joists, sills and underside of the flooring of this house carry approximately 40% moisture, especially the sills and ends of the joist nearest the foundation. And you will also find that your termite trouble in a house will fluctuate as the surrounding moisture conditions fluctuate.

As the life cycle of termites have been pretty well established by men qualified to make these deductions; in the absence of a queen or the queen dying, the second reproductive caste can start egg laying and re-establish a colony. While they lay fewer eggs than the original queen, many of them start egg laying at the same time, thus starting a supplementary colony.

Termite Damage Not Tax Deductible

Home owners whose houses are damaged by termites cannot claim a tax deduction for casualty loss on the cost of repairs, according to a recent court ruling. Termite damage is termed as "progressive deterioration of property through a steadily operating cause." A casualty, the court defined, "is an accident, a mishap or sudden invasion by a hostile agency." The definition specifically excluded termites.

It is also recognized that the cellulose of wood is the food of subterranean termites and they must have an adequate supply of moisture, and 40% moisture or more in wood is sufficient to maintain a termite colony without direct contact with the ground. Now, the question is: Is treating the foundations and adjacent soil sufficient to stop termite damage, in all cases, unless the moisture conditions are corrected, or other corrective methods used?

These termites that are trapped above the foundation treatment, if they can find debris or some material for coverage, and their moisture supply is adequate, can live and set up housekeeping just as long as their moisture supply is sufficient. In making our re-inspections, we don't find tunnels coming up over, or inside the foundation walls to indicate that termites are still working, or still have contact with the ground, so it is a tendency when we don't find these evidences to take it for granted that our work was successful; whereas, possibly if we could tear into the timbers, we would find that we still had termites.

Many times when we found that our job had broken down, after one or two years, we might have found upon closer examination, that due to the fact that the population of the termites had decreased, being shut off from the ground, had taken that long to build up their colony and manifest themselves to the point that we found they were still working.

There are two ways of correcting this situation: sometimes one is possible, sometimes the other. If it were possible to place tile drain to drain the surrounding ground, or raise the levels of this ground equal to the surrounding level, and had adequate ventilation underneath the house, it could be dried out to the point where these termites would perish. Another: If this wood could be treated with chemicals in some manner that would block their travel from one part of the building to another, such as coming from the most moist parts, to the dryer parts, then returning for more moisture, and rendering the most moist parts with a suitable chemical that they could not live in it or traverse it, would also assist in eliminating the trouble.

Method of Control

Since the lack of either food or water must be fatal to a termite colony it follows that control may be practiced by these means. Some systems of soil poisonings are based on the use of non-repellent poisons which when ingested are fatal to the intestinal protozoa of the termites. These protozoa are required by the termites as a means of digesting and assimilating cellulose and in their absence the termites must starve even though food be abundant.

Such soil poison then really acts by depriving the termites of food. A larger number of soil poisons, however, act as contact poisons, fumigants or repellents, and often a combination of 2 or all of these. In using the poisons of these types the object is to establish an impenetrable barrier of poisoned soil contiguous to the structure to be protected and thus to deny the termites in the structures access to the moisture of the soil.

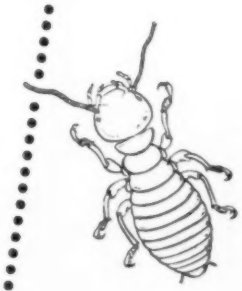
FOR **effective control** OF SUBTERRANEAN **termites...**

more and more PCOs are using

Chlordane

Thousands of applications, world-wide, prove the effectiveness of chlordane. Two pounds of chlordane in fifty gallons of water give adequate protection to the average house, leaving sufficient concentration in the soil to supply protection for two to three years. This treatment forms a good chemical barrier through which Termites cannot pass, affords excellent residual protection and is non-injurious to vegetation growing near foundations where the applications have been made.

INITIAL TERMITE COLONIES . . . Reports indicate that chlordane has been used effectively in destruction of initial Termite colonies. For complete information on proper formulations and applications, write for Velsicol Technical Bulletin No. 40.



VELSICOL CORPORATION

General Offices and Laboratories:
330 E. Grand Avenue
Chicago 11, Ill.

Export Division:
100 E. 42nd Street
New York,
New York

REPRESENTATIVES IN PRINCIPAL CITIES

PEST CONTROL

PRIMER

by A. Pescop

Identification Of Orders; No. 5, Hymenoptera

Hymen, (membrane) **pteron** (a wing)
Ants, bees and wasps

Characteristics:

1. Four clear membraned wings, hinged closely together
2. Basal part of abdomen usually slender, threadlike structure, varying in length according to species
3. Complete metamorphosis

Of Importance To PCOs

Ants (family Formicidae): Many species of ants infest the United States, and there seems to be considerable regional variation as to which are most important. Four important examples are listed below:

1. *Argentine ants (Iridomyrmex humilis):* Adult workers are 1/12" to 1/8" long. Color brown, with lighter appendages. Breeds in dark, moist places in lawns and gardens. Limited to southeastern U. S. and California. Infests all types of foods and protects other harmful insects such as aphids. Control of Argentine ants is best effected by area or community-wide effort. Spraying or dusting with chlordane or lindane should be combined with a baiting program for greatest control. 2% chlordane residual spray can be used indoors, while ½% chlordane as a water emulsion or 2 to 5% chlordane dust can be used on infested lawns and outdoor areas. For direct application to nests, use up to 2% chlordane as a water emulsion. 1% lindane dust or ¼% lindane water emulsion gives quick kill, but has less residual action. Since this insect has a preference for sweet food, poison baits should be sweetened, although grease baits or ground-liver baits may also prove effective.

2. *Pharaoh ants (Monomorium pharaonis):* Is 1/12" to 1/10" long. No spines on posterior part of thorax. Most of body is covered with minute pitted impressions. Color, yellowish-red. Breeds in inaccessible places about foundations and walls of buildings. Infests urban areas throughout U. S. 2 to 5% chlordane spray in deodorized kerosene sprayed about the foundation lines of structures is an effective control method.

3. *Little black ants (Monomorium minimum):* Workers are approximately same size as pharaoh ants. Bodies are long and slender, shiny jet black in color. Nest out-of-doors, either in lawns, cracks of cement or tree stumps. Occasionally nest in cracks in basement flooring. Consumes all types of food products. Chlordane sprays in deodorized kerosene are effective against this species also. Direct applications of 1/8 teaspoonful of 50% chlordane wettable powder to nest entrances has also given good results.

4. *Black carpenter ants (Camponotus herculeanus pennsylvanicus):* Workers range from ¼" to ½" long. Body is dark brown to black. Nests entirely in wood, hollowing wood out, but not eating it. Common in the eastern U. S. Can bite humans, but has no sting. Is especially fond of sweet foods. Apply 2% chlordane spray or 5% chlordane dust directly into nest holes.

Carpenter bees (family Xylocopidae): Size varies according to species — between 12mm. and 20mm. long. Usually blue-black, green or purple in color, with metallic sheen. Drill into the exposed dry wood of buildings, telephone poles, fence posts and bridges. One bee can burrow up to 12" in wood. To protect wood exteriors from attack, spray with 2% chlordane in petroleum oil or 1% lindane in oil. This should be applied at a rate of 1 gallon per 100 square feet. To destroy burrowing bees, any contact liquid insecticide or gas such as carbon bisulphide is effective. *Editor's Note: For a complete discussion on the habits and control of one species of carpenter bee, Xylocopa virginicus, see Dr. Thomas E. Snyder's column "Borer Lines" on page 32 of PEST CONTROL's September, 1951 issue.*

Bald-faced hornets (Vespula maculata): Workers have thick bodies about ¾" long. Color is black with creamy white markings. Build large, oval, paper nests on or near dwellings and garages. Can inflict a painful sting. Best time to control all species of wasps and hornets is at night, when the insects are quiet within the nest and less likely to sting. 2% chlordane or 5% DDT sprayed directly into open nests from beneath can

(Continued on page 43)

murder, inc!

RO-DETH
(containing Warfarin)
is Sure-death!

RO-DETH, a ready mixed, ready to use rodenticide containing new, wonder chemical, Warfarin, is acclaimed by PCOs as "the best thing for rats and mice we have ever used".

- **New 100% long-range effectiveness**
- **Safe — only excessive repeated doses can harm pets or humans**
- **More economical because it's ready mixed — no waste of time or materials.**
- **Tested in the field**
- **No bait shyness**

10 lb. Carton . . . $ 4.00
30 lb. Carton . . . 9.60
100 lb. Carton . . . 28.00

B & G COMPANY
4725 Rising Sun Ave., Philadelphia 20, Pa.
"Serving the Pest Control Industry"
Manufacturers and Distributors of Pest Control Products

THE NEW "202" MICROSOL

TOP QUALITY AEROSOL GENERATOR

Produces a large volume of fine aerosol particles instantly! Without using heat, steam or other propellant!

Where coverage took **hours** the new MICROSOL does it in seconds! Size of particles controlled by easy movement of a lever . . . from a fine, almost invisible fog to a wetting spray.

Also available with automatic shut-off timing device.

PRICE — $92.50 Net
F.O.B. Silver Creek, N. Y.

Write for literature and latest catalog of supplies and equipment for the PCO

Weight 12 lbs.
Length 19"
Dia. 6"
Height 8½"
Capacity 2 quarts

Aluminum Body
Grey-wrinkle finish
Polished aluminum discs.

for POSITIVE Pest Control
wherever aerosols are indicated

PCE

PEST CONTROL EQUIPMENT COMPANY
47 West 43rd St. VAnderbilt 6-5390 New York 18, N. Y

COMPARE
the actual Cost and you'll choose . . . TIFA

BEFORE YOU BUY a fog applicator, be sure to find out how much it will cost you to operate . . . how many bugs it will kill per dollar. No question, you'll settle on TIFA!

TIFA WILL SAVE YOU MONEY in overall operation . . . meet your most rigid specifications. For this amazingly effective unit is backed by 10 years' experience in manufacturing fog-machines. It carries the Underwriters' Listing Seal.

EACH TIFA UNIT is compact, portable, one-man-operated. It handles solutions, emulsions, suspensions with a range of droplet control from ½ to 200 microns. It discharges insecticides in a clean DRY fog which spreads quickly . . . permeates tiniest crevices . . . is SURE DEATH to mosquitoes, flies and other insects.

TODD INSECTICIDAL FOG APPLICATOR

Carrying Underwriters' Listing Seal

—●—

A Product of

COMBUSTION EQUIPMENT DIVISION
TODD SHIPYARDS CORPORATION
81-16 45th Avenue, Elmhurst, Queens, N. Y.

PEST CONTROL

NEWS

Buettner Ordered to Hospital for 30-Day Rest

Feeling the results of complete exhaustion from the industry's Boston meeting in October and from the increasing complexities of expanding service to the membership, National Pest Control

William O. Buettner

Association executive secretary, William O. Buettner, experienced near collapse on Wednesday, Nov. 7th and was ordered by his doctors to the hospital for a month-long rest. Slight coronary complications resulted in the decision that he be absolutely devoid of any NPCA problems during that time.

When this story reaches most of the readers of *Pest Control*, Mr. Buettner was to have been released from his hospital confinement. As we go to press, the hospital reports he is expected to be able to return home on December 7th.

Seemingly unexpendable energy has been keeping Bill Buettner at work on NPCA development and operation during nearly 24 hours of every day during the last 19 years. Even during this brief period of forced retirement, he wrote that there was every reason to believe he would be able to continue. This is the note he sent to NPCA members on November 15th:

"Since November 7th, I have been in the hospital. I still am. It was perhaps coming to me but let me say that the doctors have assured me that if I will remove myself completely from Association business until December 7th, there is no reason why I should be unable to carry on. Complete rest is prescribed and my job is to obey. You would want me to do this, I am sure. Fortunately, our Association office has now been geared to work as a team."

He has been recuperating in the Buckley Pavilion, Methodist Hospital, Seventh Avenue and Sixth Street, Brooklyn 15, New York.

We, along with pest control operators everywhere, look forward to many more years of service from Bill Buettner, but at a more normal pace that will permit him to get the relaxation and rest every business man needs, particularly one who heads up an industry which is growing as fast as pest control is.

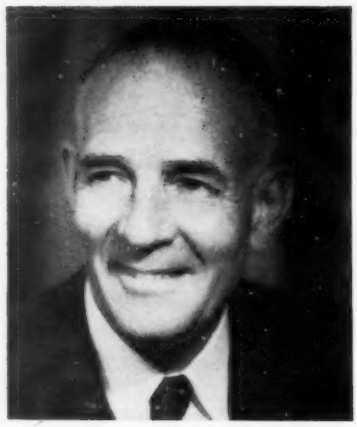
Court Denies Hyman Petition

United States Supreme Court has denied a petition by Julius Hyman & Co., Denver, Colo., for review of the judgment of the Supreme Court of Colorado, affirming a decree of the District Court in the city of Denver. This renders a decree which, in part, enjoins Julius Hyman & Co. and individual defendants from making and selling various chemicals, including the insecticide known as chlordane.

It provides further that Julius Hyman & Co., defendant, pay to the Velsicol Corp., Chicago the sum of $1,663,499.00 on account of damages caused and gains and profits realized and received by Hyman & Co. from the production and sale of chlordane for the period ending March 31, 1949. Of the above amount, Hyman & Co. is required to pay without further proceeding $1,338,789.00.

Orkin Launches Sales Campaign

An intensive sales campaign via newspapers, telephone directories and television has been set underway by the Orkin Exterminating Co., with headquarters in Atlanta, Georgia.



Arthur W. Mohr

Mohr Is NACA President

1952 presidential choice of the National Agricultural Chemicals Association is Arthur W. Mohr, president of the California Spray-Chemical Corporation, Richmond, California. Delegates to the recent NACA convention in Spring Lake, New Jersey, named Mohr to take over as presiding officer.

Mohr, who was formerly NACA vice-president, holds a degree in chemical engineering from the University of California. He gained extensive knowledge in plant and sales management with the American Bitumuls Co., a subsidiary of Standard Oil of California.

In 1947, Mohr became president of California Spray-Chemical Corp., which operates more than 30 plants manufacturing ORTHO insecticides and fungicides in the United States and foreign countries.

New sales manager of Velsicol Corporation's resin and solvents division is Andrew Schor. Previously Schor was head of the Chicago firm's technical service division. He first joined the company six years ago.

EXTENSIONS

★ LIGHTWEIGHT
★ ALUMINUM
★ SPECIAL FITTINGS
★ LEAKPROOF
★ STRONG

Try these extensions of lightweight aluminum. They have our exclusive special fittings that provide LEAKPROOF attachment of wands to applicators . . . to each other . . . to nozzles . . . WITHOUT USE OF TOOLS.

Prices Will Be Furnished On Request

⅛" I. P. S., threaded both ends, straight or angled.

SEND YOUR ORDER NOW!
DO YOU HAVE OUR CATALOG?
If not, write for a copy today.

PCE

Pest Control Equipment Co.
47 W. 43rd St. New York 18, N. Y.
VAnderbilt 6-5390

New Pistol-Type IDICO SPRAYER

The Only Sprayer that Fills the Needs of P.C.O.'s whether you use Chlordane Emulsions (water) or Oils.

Works like a motorized machine yet has no cartridge compressor, air hose or motor.

NO OTHER SPRAYER HAS THESE FEATURES

* Interchangeable nozzles that give a fine atomized mist or strong spray.
* Rifle to carry spray 20 ft. or more.
* Long neck for easy hand grip; hand rest for comfort and balance and two finger easy operating trigger.
* Self-cleaning nozzle and easy replaceable valve mechanism.
* 1 qt. steel can with wide opening and brass bottom to prevent corrosion.

LIGHT, COMFORTABLE AND EFFICIENT

Only $7.25

We pay postage on orders accompanied by check.

IDICO Products Co. Dept. A
1 WEST 125th STREET, NEW YORK 27, N. Y.

MISSISSIPPI P. C. O.

Says Automatic **PRESHUR-MITE** Inexpensive to Maintain

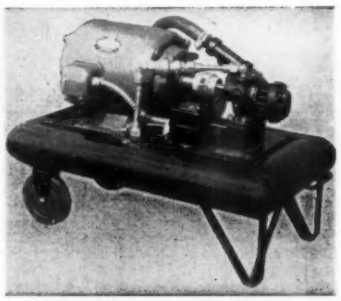
"We own and operate nine PRESHUR-MITE units and have at least one of each of the different PRESHUR-MITE models, but our prize possession is a PRESHUR-MITE that is now 15 years old and still working. Its total maintenance cost over a 15 year period has been considerably under $100. It's no wonder we like the PRESHUR-MITE for termite control work."

A. H. Jackson,
Superior Termite Control Co.,
611 West Monument St.,
Jackson, Miss.

Mr. Jackson is another of our old and valued customers who is sold on PRESHUR-MITE quality and performance. His endorsement can be a money-saving tip to you.

The Automatic PRESHUR-MITE

Heavy duty unit designed for termite control work. Pressures up to 225 lbs. PSI and up to 5 gals. liquid per minute. Features automatic pressure switch. Works direct from drum. Weighs only 127 lbs.



The Junior PRESHUR-MITE

Ideal for all types residual spraying, moth proofing, roach and termite control work, etc. Compactly designed for easy handling. Will stand up under rugged treatment. Pressures up to 125 lbs. PSI and up to 2½ gals. liquid per minute. Weighs only 44 lbs.

Complete line of 5 Preshur-Mite models to select from. Electric or Gasoline powered. Priced from $145.75 to $361.86 f.o.b. Jackson, Miss.

Write for New Catalog and Price List

Ewing Manufacturing Co.

P. O. Box 1986 Phone 3-0343
Jackson, Mississippi

Dog Meal Not Recommended As Warfarin Bait Material

"Dog meal can no longer be recommended as a suitable bait for warfarin," says Ward Ross, managing director of the Wisconsin Alumni Research Foundation in Madison, Wisconsin.

On many current warfarin labels (.5% concentrate) dog meal is referred to as a possible bait material. Ross suggests that manufacturers and distributors of warfarin baits consider deleting reference to dog meal on their next run of labels, should that reference appear on current labels.

Ship Sanitation Pamphlet

Sanitation features and facilities on operating ships is the subject of "Handbook on Sanitation of Vessels in Operation," a 44 page government publication.

For copies send 25c, requesting Catalog No. FS 2.6:Sa5/2, to the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

- **IT'S TIP-PROOF!** The special flared skirt fits flush to floor all around...will not tip even if a rat steps on the edge of the container.
- **IT'S TESTED AND APPROVED!** Tests show no signs of leakage of seepage after 18 days. Specifications call for 3 days.
- **IT'S SEAMLESS!** One-piece construction, pressed into form under tons and tons of pressure from special water-resistant stock. Holds ⅜ fluid ounces.
- **IT'S STURDY!**
- **IT'S EASY TO PICK UP!**
- **IT'S A TIME-SAVER!**
- **BUILT-IN SAFEGUARDS!** Distinct in appearance. No mistaking it...in shape...in color...and warning...poison and skull and cross bones symbols all over it.
- **MEETS RIGID SPECIFICATIONS!** "Rat Jiggers" meet all specifications of Federal agencies and National Pest Control Association.

*Trade Mark Patent Pending

- **THE STANDARD FOR QUALITY AND SAFETY** as incorporated in Standard Safe Handling Procedure for Compound 1080 and other Liquid Poisons.

Packed 5000 to a case — Prices per 1000
Trial Order—1 M . . . . . $6.75 M
5 M-25 M . . . . . $5.62 M
Minimum orders 4 cases shipped prepaid.
Larger quantity prices on request.

UNIVERSAL PAPER PRODUCTS CO.
380 Lexington Avenue • New York 17, New York

Universal Paper Products Company
380 Lexington Avenue
New York 17, N. Y.

☐ Send samples and full information.
☐ Ship through nearest distributor.
☐ C.O.D. ☐ Check enclosed.
No. 1080 RAT JIGGER* Rodenticide Containers

Print Name .....
Street .....
City ..... Zone ..... State .....

City Campaigns

In February or March, 1952, Westerly, Rhode Island will be used as a "model area" for an extensive rodent control survey, a report by Westerly health officials shows. Preliminary surveys have already been conducted for the federal Communicable Disease Control Center by local sanitarians, and the final spring tests will be conducted by specialists in rat control and rat-borne diseases.

Voters in Glen Ellyn, Illinois, near Chicago, went to the polls recently to decide whether or not their town should become a mosquito abatement district. Nearly 700 residents signed a petition to bring the issue up for a vote. For the past two years a group of citizens through private contributions have been financing spraying operations. They served notice that if the referendum fails, their volunteer efforts will cease.

Van Zandt County, Texas, has launched an all-out fall rodent campaign after numerous reports of damage caused by rats and gophers. County agent James W. McCown is in charge.

A community fly-abatement program has been recommended by Los Angeles Health officials, after a survey of Rosemead indicated that suburb was heavily infested with flies.

Mosquito extermination commissions from Hudson and Bergen counties in northern New Jersey are meeting together to find a solution to that area's heavy summer mosquito invasions. Officials believe a permanent joint board may be set up between the two counties. Their hope is to obtain additional state funds for mosquito control, since last year's $50,000. appropriation was used almost exclusively for work along the New Jersey coastline, which had no effect on north New Jersey's meadow breeders.

Cal-Spray Opens Ala. Plant

California Spray-Chemical Corp., Richmond, Calif., has opened a new plant in Decatur, Ala.

The new plant will increase Cal-Spray's production of insecticides, weed killers and fungicides.

LABORATORY SERVICES

• Peet-Grady tests • C.S.M.A. aerosol tests • Biological evaluation of agricultural insecticides • Phenol coefficient determinations • Chemical determination of insecticides • Warm-blooded toxicity studies • Warfarin assays by chemical and biological means.

Write for details

WISCONSIN ALUMNI RESEARCH FOUNDATION

P. O. Box 2059 Madison 1, Wisconsin

A. F. C. QUALITY PRODUCTS FOR PEST CONTROL

Chlordane, oil concentrate, liquid emulsifiable concentrate, wettable powder concentrate, and ready-to-use liquids and powders.

Super Fluorex V, powerful insecticide powder

Sodium Fluoride

Poison Seeds

Pyrethrum and **DDT,** powders and liquids

Paradichlorobenzene

FOR EFFECTIVE RAT CONTROL

Phosphorous Paste
Rumetan (Zinc Phosphide)
Fortified Red Squill Extract and Powder
Antu and **Antu Tracking Powder**
Thallium Sulphate
Barium Carbonate
Arsenic White

FOR TERMITES

Orthodichlorobenzene, Creosote Oil, Sodium Arsenite Powder, Pentachlorophenol Concentrate

Write for particulars and prices

AMERICAN FLUORIDE CORPORATION
151 West 19th Street New York 11, N. Y.

GET ON THE BAND WAGON

Follow the Crowd With PER-MO Profits

★ **NOW Per-Mo Warfarin for Rats & Mice**
Packed in 1 lb., 4 lb. tin containers

★ **Per-Mo 5 Year Guarantee Moth Proof Liquid**
Packed in Pints, Quarts, ½ gals., gals., and 5 gal. containers

★ **Per-Mo Flameproof Liquid**
Packed in Gallon containers or in Drums

★ **Per-Mo Rat & Mice Liquid**
Packed in 8 oz. bottles or in gallon containers

★ **Per-Mo Rat Bits Made With Red Squill (Fortified)**
Packed in 4 and 16 oz. containers or in Bulk

★ **Per-Mo Rat Paste, Made With Red Squill (Fortified)**
Packed in 4-8-16 oz. jars, and in Bulk

★ **Per-Mo Rat Paste, Made With Antu**
Packed is 4-8-16 oz. jars, and in Bulk

★ **Per-Mo "Chek" Deodorant**
Packed in Quarts or in Gallons

WE WILL SHIP YOU A GENEROUS SAMPLE OF ALL THE ABOVE PRODUCTS FOR $5.00 EXPRESS PREPAID.
Send Check or Money Order

PER-MO
STANDS THE TEST
IT'S BY FAR THE BEST

• **All Per-Mo Products Packed Under Your Private Label If Desired.**
Write Today . . . Full Particulars First Letter

PER-MO PRODUCTS COMPANY
1715 E. 36th St., Kansas City 3, Mo.

Making A Government Bid?

PCOs who are trying to sell their service to the government can get the facts and figures on the complexities of federal procurement procedures by obtaining "Selling To Your Government," a seven page booklet. Through a question-and-answer format, this publication shows the potential government-contract bidder what steps he must take to obtain and properly fill out a contract. Send 5c to the Superintendent of Documents, U. S. Government Printing Office, Division of Public Documents, Washington 25, D.C. Request Catalog No. Y 4.Sm1/2: Se 4.

Velsicol Has Berkeley Office

A west coast office for insecticide sales and services has been established at 2082 Center St., Berkeley, Calif. by the Velsicol Corp., Chicago.

IT REALLY WORKS

BIG STINKY ®
FLY TRAP

BIG STINKY Attracts & Traps Flies

FOR OUTDOOR USE

Used by thousands in yards, beaches, parks, resorts, mink and fox ranches, barn and poultry yards — Hospitals, Restaurants, Hotels, Parking Lots, Food Processing Plants, Canning Co.

Improves Indoor Control Results

Manufactured by

the DIOPTRON Co.

P. O. Box 1313 (Unlucky for Flies)
Milwaukee 1, Wis.

Prentiss Publishes Warfarin Data

In a colorful, 16 page booklet just released, Prentiss Drug & Chemical Co., New York, describes the uses and effectiveness of its warfarin concentrate, "Rax Powder."

Tracing the history of warfarin's development from its discovery in the University of Wisconsin laboratories to its present wide acclaim, the publication gives detailed instructions on the use of their product "Rax Powder," suggested consumer prices, labeling and baiting.

Copies of the booklet are available upon request from the manufacturer at 110 William St., New York 38, N. Y.

Hymenoptera Catalog

"Hymenoptera of America North of Mexico, Synoptic Catalog," is a new government publication.

This 1420 page, cloth-bound book is a compilation of published information pertaining to species or form, and relationships between different species. Sawflies, wood wasps, ants, gall wasps and related forms are discussed.

To obtain a copy send $4.00 to the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Ask for Catalog No. A 1.78:2.

DuPont Cuts Methoxychlor Price

Prices on car-lot deliveries of E. I. duPont deNemours & Co., "Marlate", methoxychlor insecticide have been cut approximately 11½%, company officials report.

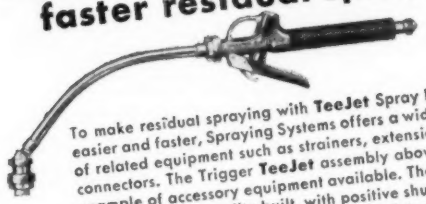
DuPont & Co., which has its headquarters in Wilmington, Del., also announced that prices on EPN-300 insecticide, an organic phosphorus compound, have been cut-back a similar percentage.

NSSA In New Quarters

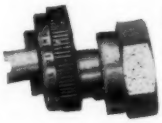
Need for more space has prompted the move of the National Sanitary Supply Association from the 12th to the 11th floor of their present national headquarters building in Chicago where they will have more room.

Address, however, is still the same: 139 North Clark St., Chicago 2, Ill.

TeeJet tools for better, faster residual spraying



To make residual spraying with **TeeJet** Spray Nozzles easier and faster, Spraying Systems offers a wide range of related equipment such as strainers, extensions, and connectors. The Trigger **TeeJet** assembly above is one example of accessory equipment available. The Trigger **TeeJet** Valve is quality built, with positive shut-off and lever lock-catch for easy open operation. Extensions are supplied straight or curved in lengths up to 48".

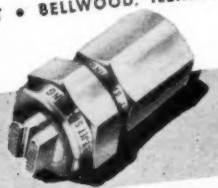


MulTeeJet TIP ASSEMBLY

Here is a handy nozzle assembly that provides four different sprays in one nozzle assembly. The head of the nozzle rotates and indexes to four positions . . . each position giving a different spray. The MulTeeJet Tip Assembly fits the Trigger Valve or will fit any connection used for **TeeJet** Nozzles.

SPRAYING SYSTEMS CO.
ENGINEERS AND MANUFACTURERS
3221 RANDOLPH STREET • BELLWOOD, ILLINOIS

SPRAYING SYSTEMS
TeeJet
SPRAY NOZZLES



WRITE FOR BULLETIN 58
for complete information on **TeeJet** Spray Nozzles and related equipment for residual spraying.

Attention!

PEST CONTROL OPERATORS

Here's An Opportunity
To Increase Your Earnings

. . . by adding a necessary maintenance service for the reduction of Fire Hazards — for places you are now servicing and also a door-opener to accounts you are not now servicing.

CHEMSICO has two services to offer — REDUCTION OF FIRE HAZARDS IN EXHAUST SYSTEMS and AIR-CONDITIONING CLEANING SERVICE.

We train your men! Small investment. For TERRITORIES NOW AVAILABLE WRITE or WIRE . . .

Chemical Service Corporation
1511 Corvallis Avenue Cincinnati 37, Ohio

Acme ALL METAL BAIT STATION

(for control of Rats and Mice)

The Acme Bait Station provides the safest way to apply continuous baiting, safely and efficiently.

The Acme Station attaches to floor or wall with screws. Special design allows lid to open from top or front. Door is secured with padlock which is furnished. Size: 8" high, 9" wide, opening is 2½" radius.

"Danger" labels are furnished with space for imprinting your firm name.

Enjoy peace of mind and create customer confidence with the Acme Bait Station.

All metal bait station, finished in neutral color, lacquer, complete with labels and padlock. Shipped partially "knocked down" to save shipping charges. Easily assembled. Let these bait stations work for you 24 hours a day. They will save time, and are proved effective.

$1.85 each in doz. lots or $1.75 each for six doz. or more

SEND FOR SAMPLE BAIT STATION & SEE FOR YOURSELF

Only $2.10

ACME EXTERMINATORS
4210 HARRISON ST.
KANSAS CITY 4, MO.

RESIDEX 50
CHLORDANE EMULSION CONCENTRATE for TERMITE CONTROL

FIELD TESTED for three seasons by many PCO's, Residex 50 is indicated where termite control requires outdoor trenching.

USERS REPORT:

✓ *Excellent results*
✓ *No plant damage due to Residex "50"*
✓ *Lower costs*
✓ *No odor problems*

Make plans today to answer next season's requirements.

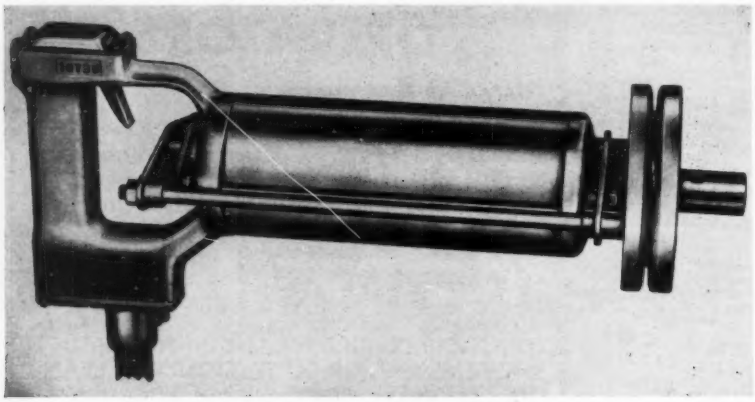
WRITE FOR PRICES AND RECOMMENDATIONS

✓ **WATER SOLUBLE**
✓ **NO EXPENSIVE SMELLY OILS**

RESIDEX
CORPORATION
FOOT OF CENTRE STREET, NEWARK (2) N. J.
PHONE, MARKET 3-0566

Syntron Adds New Drill

Another electromagnetic hammer drill—model No. 17-RO—for highspeed drilling in concrete, brick and stone, has been added to the line of electric hammers and hammer drills manufactured by the Syntron Company.



Syntron Electromagnetic Hammer Drill

No. 17-RO has a drilling capacity of 1⅛", weighs 21½ pounds and can be operated from either 110 volt A.C. or 220 volt A.C.

Automatic rotation of the carbide-tipped, spiral fluted drill speeds up hole drilling, the company claims, and eliminates manual turning of the drill chuck and reduces fatigue. Rotation of the drill bit is accomplished by a rubber ratchet mechanism actuated by the recoil of each blow of the hammer's piston, with approximately 3600 blows per minute.

Descriptive literature on this new drill is available from the manufacturer at 790 Lexington Ave., Homer City, Pa.

"Hydropulse" Stops Corrosion

Pioneer Division of Scott & Williams, Inc., New York City, announces development of "Hydropulse", a pump which eliminates corrosive action of fluids.

Attached to Scott & Williams homogonizers, "Hydropulse" has a special feature which prevents fluids being handled from coming in contact with the pumping mechanism and attacking it.

William M. Frazer, sales manager of the Pioneer Division, says that present models are too small for the insecticide industry, but that similar equipment designed to meet the particular needs of this field is now on the drawing board.

Address inquiries to the company at the Empire State Building, 350 Fifth Ave., New York 1, New York.

2-C New Fly Repellent

2-C, a new fly repellent which claims to be more effective and longer lasting than current preparations, is now available for over-the-counter sales.

Edmund Socec, discoverer of this new material, says it is the result of four years of field and laboratory testing in various parts of the country. One of 2-C's special features, he states, is that it does not affect human skin or fishing rod varnishes, paints, plastics, nylons, silk or coated fishing lines.

When applied to the skin, Socec maintains, 2-C has a repellency of from 3 to 16 hours, depending on weather conditions. Tests have shown, it is stated, that 2-C has a low allergy content, and will not increase dangers of sunburn.

2-C has been used by many conservation and hiking associations, including U. S. Forest Service, New Hampshire, Tennessee, Missouri and Maine Conservation Commissions, Audubon Society, Appalachian Trail Conference and the Federation of Western Outdoor Clubs.

PCOs interested in marketing this product, or obtaining further information should contact Mr. Socec, care of Avenue Farm, Route 5, Augusta, Maine.

Booth Exhibitors

(from page 18)

Co., New York City. Hand and power sprayers, sprayer accessories, insecticide formulations, containers. Jack and Betty Benmosche.

Booth No. 2. **Innis, Speiden & Co.**, New York City. Chlorpicrin grain fumigant and rat repellent. Joseph Lyons and L. H. Brett.

Booth No. 3. **Prentiss Drug & Chemical Co.**, New York City. Pesticide formulations, featuring warfarin. Friar Thompson and Miss Helena Whalen.

Booth No. 4. **B. & D. A. Weisburger**, New York City. All kinds of pest control insurance. David Weisburger and Jerome Goodman.

Booth No. 5. **Baird & McGuire, Inc.**, Holbrook, Mass. Special insecticide and sanitary product formulations available for repackaging. Gordon and Cameron Baird.

Booth No. 6. **Velsicol Corporation**, Chicago, Ill. Chlordane. G. K. Schumaker, Andrew Schor and William A. Eichler.

Booth No. 7. **U. S. Fish & Wildlife Service**, Washington, D. C. Rodent control demonstration. John C. Jones and Jack Spencer.

Booth No. 8. **R. H. Russell Distributors**, Charlotte, N. C. Kil-Jet fog generator. Harry Studier.

Booth No. 9. **U. S. Chemical Products Co.**, Columbus, Ohio. Gard flame and mothproofing spray. Paul Cline.

Booth No. 10. **Aegis Laboratories, Inc.**, Chicago, Ill. Grosley's pigeon repellent. George Horewitch and Samuel A. Grossman.

Booth No. 11. **Gallant Termite Barrier, Inc.**, West Newton, Mass. Termite barriers. Henry J. Surette and Carrol Wile.

Booth No. 12. **Virginia Smelting Co.**, West Norfolk, Va. Aerosol insecticides and self-propelled residual and space sprays. R. H. Perdue, Harry Lear, William Buzel, Andrew Anderson and Fred Luckenbach.

Booth No. 13. **Mine Safety Appliances Co.**, Pittsburgh, Pa. Protective equipment. George L. Seth.

Booth No. 14. **Residex Corp.**, Newark, N. J. Warfarin, bait containers, insecticidal emulsions and mothproofing concentrates. F. S. Kirkpatrick.

Booth No. 15. **American Cyanamid Co.**, New York City. HCN fumigants. Thomas Refbord, Floyd Bull and Joseph Heffler.

Booth No. 16. **Dow Chemical Co.**, Midland, Mich. Methyl bromide fumigants. Larry Maxwell and Miss Doris Krauss.

Booth No. 17. **S. B. Penick & Co.**, New York City. Featuring warfarin, plus a full line of pesticides. Hart Harris, Jr., Byron A. LaForge, Patrick J. Connolly and W. C. Mowry, Jr.

Booth No. 18 (shared by two exhibitors). **Rose Exterminator Co., Chicago, Ill.** Sure-Shot and Dyno Sprayers. Svend A. Neilson. **Lethelin Products Co.**, Mount Vernon, N. Y. Ant and roach killer kits, bulb dusters. G. G. and J. C. Wittwer.

Booth No. 19. **California Spray-Chemical Corp.**, Richmond, Calif. Lindane formulations. Carlisle Rathburn, Robert W. Rech, Donald Davis and Robert Wallace.

Booth No. 20. **Remington Products Co.**, Elizabeth, N. J. Insecticide vaporizers. J. G. Budd.

Booth No. 21. **Chemical Insecticide Corp.**, Brooklyn, N. Y. Insecticidal formulations. Arnold Livingston and Armand Lepore.

Booth No. 22. **B & G Co.**, Philadelphia, Pa. rodent kits, hand sprayers and warfarin concentrates. William Brehm and James Henry.

Booth No. 23. **Mercury Chemical Co.**, Chicago, Ill. Chlordane formulations. Howard Rosenbaum.

Booth No. 24. **Ewing Manufacturing Co.**, Jackson, Miss. Preshur-Mite compressors. George L. Ewing. (Display material was lost in transit).

Booth No. 25. **Chapman Chemical Co.**, Memphis, Tenn. Pentachlorophenol for termite control. Thomas Forshaw, Edward J. Poh, Dennis Casey and Keran Markey.

Booth No. 26. **Cardinal Chemical Co.**, Philadelphia, Pa. Secto-Vap vaporizers. Jules Laibow.

Booth No. 27. **H. D. Hudson Mfg. Co.**, Chicago, Ill. Full line of hand and power sprayers. David P. Lewis, H. R. Chapman, Gar Lewis and Gordon Williams.

Booth No. 28. **John Bean Division**, Lansing, Michigan. Power sprayers. Harry Studier.

Booth No. 29. **William A. Maguire Co.**, Haverhill, Mass. Fish and red squill combination rodenticide. Edward A. Maguire and Jack McAuliffe.

Booth No. 30. **Pest Control magazine**, Cleveland, Ohio, was represented by James A. Nelson and William N. Troy.

RODENTICIDE & INSECTICIDE INSURANCE

for

The Pest Control Operator And Allied Industries

Our Public Liability policies include essential coverage against the risks of "1080". Certificates of insurance issued to meet your requirements.

★

Other type policies, in all representative

AMERICAN STOCK COMPANIES for

Public Liability — Workmen's Compensation
Auto Liability — Products Liability
Property Damage — Accident and Health
All Allied Lines

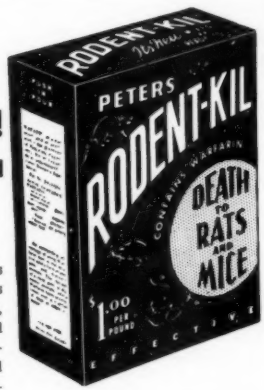
Also
Life Insurance and all Forms of
Employee Insurance Plans

Inquiries cordially invited.
There is, of course, no obligation.

B. & D. A. WEISBURGER
1440 Broadway, New York City 18, N. Y.

Rats, Mice, Moles, LOVE TO DIE this easy, new way!

New "wonder" biochemical kills rodents through internal hemorrhage



100% KILL of rats and mice! That's the remarkable record of Peters RODENT-KIL containing Warfarin, the patented biochemical discovered in the University of Wisconsin biochemistry laboratories and developed by the Wisconsin Research foundation. Warfarin is ready-mixed in Peters RODENT-KIL with food bait rats and mice can't resist. Warfarin kills s-l-o-w-l-y . . . routs the rodents out of homes, barns and buildings into the open where they bleed to death internally! Non-lethal to humans, pets and domestic animals when used according to directions. This product is dehydrated and will not decompose, mold or turn sour.

Rodent-Kil is packed in the following sizes:

1-lb. cans $7.20 per dozen
2½ lb. cans $18.00 per doz.
25 lb. drums $ 9.25
50 lb. drums 17.00
100 lb. drums 31.00

THE PETERS COMPANY
Manufacturers and Distributors of
INSECTICIDES • RODENTICIDES • CHEMICALS
PEST CONTROL EQUIPMENT
STEVENS POINT, WISCONSIN

VALVES!

Add Years of Life to Old Equipment with PCE improved Shut-Off Valves!

Standard on all PCE equipment, but will make ANY equipment better.

Designed for clean, quick on-off operation —lifetime Koroseal washers—drop forged brass—special oil-resistant washer eliminates graphite cord packing — s t r o n g, s t u r d y spring-discharge end of valve is ⅛" I.P.S Female —intake end of valve is ¼" I.P.S. Female.

PCE

Prices on Request

PEST CONTROL EQUIPMENT CO.
47 W. 43rd St. VAnderbilt 6-5390 New York 18, N. Y.

FOR TERMITES

Vaccinol

WOOD PRESERVATIVE

for TERMITES and POWDER POST BEETLES

Backed By 19 Years of Acceptance

Ready-to-use — Effective — Economical

Penetrates wood quickly • Requires no mixing • Does not stain wood or painted surfaces • Remains active for years • Control moisture that causes mold and decay • Safe and easy-to-use • Requires no mask

Exclusive Franchise available to responsible PCOs

Send Us Your Orders For
PENTAchlorophenol Concentrate 1 to 10

The VACCINOL Products Corporation
P. O. Box 3205 Phone 9-1166 Memphis 9, Tenn.

BOOKS ....your guide to the newest

Natural History Of Mosquitoes

By DR. MARSTON BATES

Mosquito fighters, whether they be PCOs or city sanitarians, will find Dr. Bates' book give them excellent background material in approaching control problems. While the author does not enumerate controls or make specific recommendations, his volume is a gold-mine of information on the complete life cycle of the mosquito, its habitat, disease-bearing potential and geographic distribution.

The book is based on Dr. Bates' research carried out in the small Colombian town of Villavicencio. In his preface he remarks that while such isolation may have kept him from using the best biblographic references, he was at least "in constant touch with mosquitoes."

Dr. Bates begins his study with an analysis of adult mosquito behavior, their flights, orientation reactions, longevity, dispersal, seasonal distribution, sexual behavior, food habits, egg development and oviposition. He then devotes four chapters to larval stages, with special attention given to classification of breeding places.

Published in 1949. 379 pages.

Price: $5.00 plus 15c postage

* * * *

The Chemistry And Action Of Insecticides

By HAROLD H. SHEPARD

PCOs looking for a simple yet authoritative description of the chemistry and action of insecticides will find it in this volume.

Instead of subdividing insecticides on the basis of the manner in which insects are exposed, this volume arranges materials according to chemical relationships. Included in the work are almost 100 pages on the new synthetic organic insecticides, and a somewhat shorter discussion on attractants and repellents.

Complete formulas and ratios are given on all chemical preparations discussed, with a summation of test results.

Published in 1951. 504 pages.

Price: $7.00 plus 25c postage

* * * *

Insect Resistance In Crop Plants

By REGINALD H. PAINTER

Entomológists and others concerned with agricultural pest control can get a methodical outline of plant resistance to insects from Prof. Painter's work.

Summing up first with the mechanisms and permanence factors of natural plant resistance to various types of insect infestation, Painter then specifically studies resistance to insects in wheat, corn, cotton, sorghums, and potatoes. An additional chapter on proper breeding to achieve the highest natural resistance follows. Each chapter is preceded by an outline, and followed by a long list of references. The book is completely indexed.

Published in 1951. 520 pages.

Price: $8.50 plus 25c postage

The books listed on these pages can be purchased from PEST CONTROL. When ordering, be sure to include check or money order covering full price of books plus postage. Prices are listed under each review. New titles will be added as they are published.

Insect Pests Of Stored Grain & Grain Products

By RICHARD T. COTTON

Dr. Cotton gives particular attention, in this newly revised edition, to problems resulting from insect infestation in stored wheat and the effects of insect contamination of wheat stocks in mills.

Starting with farm-stored grain, where insects begin their infestation, Dr. Cotton outlines a prevention program which carries through country and terminal storage.

All insects which infest grain and milled cereals are described, and effective controls enumerated. Herman Steen, editor of Hook-Up, publication of the Miller's National Federation, says "this new edition is undoubtedly the most comprehensive treatise in its field."

This volume will prove equally valuable as a textbook for entomology students and a reference manual for manufacturers and users of pest control supplies.

Published in 1950 (Revised Edition). 244 pages.

Price: $3.25 plus 15c for postage

* * * *

Methods Of Insect Control, Part I

By DR. DWIGHT ISELY

In Part I of this two part work, Dr. Isely sets up a series of specific insect problems requiring varying types of control, and then gives recommendations based on the biology and destructive habits of the insect.

Published in 1949 (Revised Edition). 134 pages.

Price: $2.00 plus 15c postage

* * * *

Methods Of Insect Control, Part II

By DR. DWIGHT ISELY

Part II, designed to follow or alternate with Part I of this work, discusses insect control by use of insecticides. Basis for choice of insecticides is explained, plus the dosages used, timing of applications and difficulties to be expected.

Recommended to PCOs as a non-technical, "how-to-do-it" textbook on general pest control.

Published in 1949 (Revised Edition). 184 pages.

Price: $2.25 plus 15c postage

Medical Entomology

By DR. WILLIAM B. HERMS

Dr. Herms, who completed revision of this work shortly before his death in 1949, lays particular emphasis on diseases carried by insects which are dangerous to man and animal. He does not, however, restrict himself solely to biological and environmental problems. In each individual case, specific control recommendations are made, and insect life histories are traced, to better acquaint PCOs with the best methods of eliminating pests.

Single chapters are devoted to cockroaches and beetles, bugs, lice, gnats, houseflies, louseflies, ticks, mites and venomous and urticarial arthropods. Four chapters are given to the mosquito, including its biology and classification, its ability as a disease vector and mosquito abatement.

All chapters are concluded with bibliographic references, and the book has a complete index of 30 pages. Many photos and line illustrations feature this study, which should make a valuable addition to any PCO library.

Published in 1950. 643 pages.

Price: $9.00 plus 25c postage

* * * *

American Spiders

By DR. WILLIS J. GERTSCH

American Spiders by Dr. Willis J. Gertsch is but one of a series of books published in the New Illustrated Naturalist Series designed to cover all principal phases of natural history. Dr. Gertsch's product stems from a life-time of work and study on spiders, and the results are both readable and comprehensive.

While not primarily a manual of spider identification, the book is a detailed study of the spider's life and habitat. As curator of the American Museum of Natural History, Dr. Gertsch collected a large number of photographs for inclusion in the book. A total of 111 plates are used, 44 of which are in full color.

Opening chapters deal with such topics as the place of spiders in nature, their courtship and mating habits, and their evolution. Later portions of the book are devoted to specific studies of the Tarantula, Cribellate spiders, aerial web-spinners and hunting spiders.

Published in 1949. 285 pages.

Price: $6.95 plus 25c postage

* * * *

The Housefly

By LUTHER S. WEST

Professor West's book is probably one of the most comprehensive books ever published on one particular species of insect. Examining first the historical importance of houseflies, he goes on to detail their internal and external body structure, life history, larval stage, metamorphosis, geographical distribution, food habits, disease-carrying potential, and the relationship of houseflies to public health.

Most important for PCOs, West gives some 100 pages to considering the latest housefly control measures, and he then gives a review of the newest insecticides. An excellent manual on the latest data in fly control.

Published in 1951. 584 pages.

Price: $7.50 plus 25c postage

ORDER FROM PEST CONTROL, 1900 EUCLID BLDG., CLEVELAND 15, OHIO

and best for your library

Basic Horticulture

By VICTOR R. GARDNER

While primarily a manual for the horticulturist, Gardner's book does contain valuable information for PCOs who do control work on ornamentals and in gardens. The last two chapters in this work are devoted exclusively to plant pest control and methods of spray application. Photographs are widely used to illustrate plants and pests discussed.

Published in 1951 (Revised Edition). 465 pages.

Price: $4.75 plus 15c postage

* * * *

Odors: Physiology and Control

By CAREY P. McCORD

This work, according to the publishers, is the first comprehensive technical book published in the United States dealing exclusively with the subject of odors and their control. It may well provide PCOs, industrial and city sanitarians with solutions to a problem which grows larger as the demand for chemical pest control increases.

Relationship of odors to health, as well as the legal aspects of odor control are emphasized in this work. A number of practical methods are outlined to eliminate odors in factories, homes, public buildings, etc.

Published in 1949. 405 pages.

Price: $6.50 plus 25c postage

* * * *

Introducing The Insect

By DR. F. A. URQUHART

Dr. Urquhart's book is directed, in the main, towards those who as yet have had little association with entomology or professional pest control. It is primarily an identification text for the newcomer, and as such, is an excellent one.

The book gives detailed identifications on a great variety of insects, from earwigs and termites to ants and beetles. Each separate identification is illustrated in line drawings, in many cases showing the insect's complete metamorphosis. Four full color plates on moths also highlight this volume.

Published in 1949. 287 pages.

Price: $5.00 plus 15c postage

* * * *

Insects In Your Life

By DR. C. H. CURRAN

Making entomological information both useful and readable is Dr. Curran's object in this book on insects which surround and sometimes harm man.

Writing in a simple, down-to-earth style, Dr. Curran devotes most of his talents, both as a writer and entomologist, to discussing the habits and habitats of common household and garden insects.

Beneficial as well as harmful insects are enumerated, and when harmful pests are encountered, a full discussion of effective controls follows. Light reading for "off" moments, with plenty of sound knowledge behind it.

Published in 1951. 316 pages.

Price: $3.50 plus 15c postage

American Social Insects

By DR. CHARLES B. MICHENER and MARY H. MICHENER

This book makes a detailed study of those insects which group themselves into family units or colonies, such as bees, wasps, ants, and termites. Opening chapters are devoted to the general characteristics common to all social insects, with later sections reserved for specific types. Termite operators will find the last 130 pages particularly interesting, for they carry a full discussion on the habits, appearance, and range of distribution of subterranean termites. Most of the photographs are in full color, taken in natural insect habitats.

Published in 1951. 267 pages.

Price: $6.00 plus 25c postage

* * * *

Handbook Of Agricultural Pest Control

By S. F. BAILEY and L. M. SMITH

Of practical use to PCOs and custom sprayers, this handbook covers the entire field of agricultural chemicals (insecticides, fungicides, plant hormones, nutrient sprays, defoliants, etc.). Also included are chapters on fumigation, spray machines, toxicology, dusts and dusting, aircraft, and mosquito control.

Basic data needed in making estimates, planning work and carrying out application of agricultural chemicals are compiled. Text-book type discussions have purposely been omitted, to produce a straightforward, practical handbook.

This volume is pocket-size and bound with a flexible leatheroid cover for easy handling.

Published in 1951. 191 pages.

Price: $3.25 plus 15c postage

* * * *

Insect Control By Chemicals

By PROF. A. M. A. BROWN

Practically all phases of insecticidal structure, toxicity, application and control effectiveness come under Professor Brown's view. Individual chapters are given to the properties, structure and toxicity of insecticides, chemical controls for plant-feeding insects and chemical controls for insects affecting man and animals. A special section on the application of insecticides from aircraft is included.

Published in 1951. 817 pages.

Price: $12.50 plus 25c postage

* * * *

Food-Plant Sanitation

By MILTON E. PARKER

Prepared as one of a series of books on food technology, Mr. Parker's study should have wide appeal among industrial sanitarians and PCOs who oversee sanitation programs in food plants.

Giving two chapters to effective rodent and insect control, Parker also details the government's stand on sanitary packaging and handling of food products. The work is concluded with excerpts from various federal regulations and notices pertaining to food sanitation and the handling of insecticides.

Published in 1948. 447 pages.

Price: $6.00 plus 25c postage

Be Sure To Enclose Your Check or Money Order

MOST UP-TO-DATE BOOK IN PEST CONTROL

with

A NEW CHAPTER EVERY MONTH

No standard book can keep up with latest procedures, new chemicals, equipment and a constant exchange of new ideas. PEST CONTROL has been doing just that every month since 1933. No one in pest control work should be without his own personal copy.

just

$4.00 for 1 Year

$4.50 Outside U. S. A.

•

SUBSCRIBE NOW!

Send Your Check or Money Order to

PEST CONTROL

1900 Euclid Building

ORGANIZATION NEWS

"Eliminate Racketeers," Corley Advises Texas PCA

Pest control operators can more easily attain a professional status by helping to eliminate the stigma of "racket" from their industry, says N. W. Corley, regional vice-president of the Texas Pest Control Association.

In a letter to all Texas PCA members, Corley declares that "one of the chief problems facing the pest control industry is the presence of unscrupulous fly-by-night operators, especially in the field of termite control." He stresses that one method of eliminating such "racketeers" is for termite firms to work in close conjunction with such agencies as the Better Business Bureau, local Chambers of Commerce and similar agencies. "In several cases," he states, "reliable operators, at the request of the Better Business Bureau, have inspected properties which were supposed to have been treated by fly-by-night operators. Evidence thus obtained has been used by the Bureau, in cooperation with local law enforcement agencies, to deal effectively with 'operators' involved."

Corley cites his own area, Dallas, as a good example of what can be done to get rid of shysters, although he says that there are still some "gyp practioners" remaining. He warns that if the problem is not solved, quack operators will continue to "bring the pest control industry and its many reputable members into disrepute, and will obtain money from the public which should be spent in legitimate pest control channels."

PEA To Honor Rabin

Harry Rabin, chairman of the Fumigant Board of New York City's Board of Health will be named "Man of the Year" by the Professional Exterminators Association at their annual banquet, December 7, at the Nikolaus Restaurant in New York City.

Rabin receives his honor as a result of "his untiring efforts to improve the pest control industry, and the close cooperation that industry has received from Mr. Rabin and the entire City Department of Health," William Farrell, association treasurer, says.

Educational Talks Planned

PEA members are looking forward to the numerous educational talks planned for the forthcoming year. As in the past, leading authorities on pest control and related fields will be scheduled to speak before the association's monthly meetings.

Shaping up plans for a short course to be held later in the coming year drew close attention from PEA members as they convened on November 12. No date has as yet been set for this event.

Rapping the presidential gavel in 1952 will be David Cantor of Bell Exterminating Co., New York, who was elected at the same November 12 meeting. Jack L. Huberman, Scientific Exterminating Co., will hold the post of vice-president, while Phillip W. Friedman, Sanex Exterminating Co., and William Farrell, Effective Exterminating Co., continue to serve as secretary and treasurer, respectively.

Florida Board Deletes Rule 11

Rule No. 11 in the booklet of rules promulgated by the Florida Structural Pest Control Board has been declared invalid, as of September 20, 1951. The rule reads as follows:

"Persons Coming Under Supervision of Certified Holder — Rule 11. Only bonafide employees of the certificate holder or the business firm represented by the certificate holder may work under the certificate holder. This rule prohibits any and all special commission or percentage arrangements between a certificate holder, and other persons whereby such persons might be authorized to perform structural pest control jobs."

CALENDAR OF MEETINGS

Chemical Specialties Manufacturers Ass'n, 38th Annual Meeting, The Mayflower Hotel, Washington, D. C., Dec. 3-4.

Florida Structural Pest Control Exams, Room 419, Library, University of Florida, Gainesville, Dec. 3-5.

Ohio Pest Control Ass'n, 7th Annual Convention, St. Francis Hotel, Canton, O., Dec. 6-7.

Combined Meetings of American Ass'n of Economic Entomologists; Entomological Society of America; American Phylopathological Society; and Potato Ass'n, Netherland Plaza Hotel, Cincinnati, Ohio, Dec. 9-13.

Manufacturing Chemists Ass'n, Semi-Annual Meeting, Waldorf-Astoria Hotel, New York Dec. 13.

Twelfth Annual Southern PCO Conference, Louisiana State University, Baton Rouge, La., Jan. 28-30, 1952.

Sixteenth Annual Purdue PCO Conference, Purdue University, Lafayette, Ind., Jan. 28-Feb. 1, 1952.

Twelfth Annual Eastern PCO Conference, University of Massachusetts, Amherst, Jan. 31-Feb. 2, 1952.

Pennsylvania State College PCO Short Course, State College, Pa., March 4-6, 1952.

National Sanitary Supply Ass'n, 29th Annual Convention and Exhibition, Stevens Hotel, Chicago, March 23-26, 1952.

American Mosquito Control Ass'n Annual Convention, Hotel Utah, Salt Lake City, March 24-27, 1952.

North Central States Branch, American Ass'n of Economic Entomologists, Annual Meeting, Minneapolis, Minnesota, March 27-28, 1952.

Tenth Annual Canadian PCO Conference, University of Montreal, Montreal, Canada, May 12-14, 1952.

Chemical Specialties Manufacturers Ass'n, 38th Mid-Year Meeting, Hotel Copley Plaza, Boston, June 8-10, 1952.

Manufacturing Chemists Ass'n, Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va., June 23-24, 1952.

Forest Products Research Society, Annual Meeting, Milwaukee, June 23-25, 1952.

Pletcher Joins Penick

Harold E. Pletcher is now associated with S. B. Penick & Co., New York, as assistant production manager.

Pletcher comes to Penick & Co. after 18 years as production manager of the Ansco Division of General Aniline & Film Corp.

Do You Belong to Your Local, State or National Associations?

If you don't belong to your local, state or national pest control associations, you don't know what your missing! Carefully planned programs, many in conjunction with the entomology departments of state universities, give members invaluable help and information.

Below is the most complete list of pest control associations now available, along with the name and address of the secretary of each one. Look the list over; find the one nearest you and contact the secretary about membership requirements.

If any association is not listed here, the secretary is urged to send in full information about his group so that future listings can include all known organizations. Send address corrections and additions to *Pest Control*, 1900 Euclid Building, Cleveland 15, Ohio.

Alabama Pest Control Association:
A. B. Hollingsworth, Secy.
Orkin Exterminating Co.
107 Bibb St., Montgomery

Arkansas Pest Control Association:
O. H. Curry, Secy.
P. O. Box 2473, Little Rock

Pest Control Operators of Calif.:
B. W. Whitaker, Secy.
3872 Fifth Ave., San Diego 3

Canadian Pest Control Association:
D. W. Sanderson, Secy.
64 Wellington St. W.
Toronto, Ontario

Connecticut Pest Control Assn.:
Frank Lavery, Secy.
341 State St., New Haven

Florida Pest Control Association:
Kenneth Sessler, Secy.
3850 Bird Rd., Miami

Georgia Pest Control Association:
Marcus Kaplan, Secy.
1531 Central Ave., Augusta

Hawaiian Pest Control Association:
William Komoda, Secy.
1082 S. Beretania
Honolulu, T. H.

Illinois Pest Control Association:
R. G. Clark, Secy.
2757 N. Lincoln Ave., Chicago 14

Indiana Pest Control Association:
Prof. John V. Osmun, Secy.
Dept. of Entomology
Purdue University, Lafayette

Iowa Pest Control Association:
Chris Blohm, Secy.
Atomic Pest Control
220 S. Market St., Ottumwa

Kansas Termite & Pest Control Assn.
Richard Evans, Secy.
940 North Main, Wichita

Louisiana Pest Control Association:
J. H. McBride, Secy.
Burmac Termite Control,
Shreveport

Maryland Pest Control Association:
James G. Little, Secy.
6901 York Rd., Baltimore 12

(Michigan) Wolverine Pest Control Association:
Myron Sempliner, Secy.
609 E. Congress St., Detroit 6

Mississippi Pest Control Assn.:
C. B. Treadway, Secy.
122 S. Farish St., Jackson

Missouri Pest Control Association:
John Loe, Secy.
915 Charlotte St., Kansas City

(Missouri) St. Louis Pest Control Association:
James M. McDonald, Secy.
5565 Chamberlin, St. Louis

New England Pest Control Assn.
Leonard V. Goldman, Secy.
447 S. Water St.
Providence 3, Rhode Island

National Pest Control Association
William O. Buettner, Exec. Secy.
30 Church Street
New York 7, New York

(Nebraska) Omaha Pest Control Assn.
Roy Mason, Secy.
105 South 24th St., Omaha

New Jersey Pest Control Assn.:
Dr. John B. Schmitt, Secy.
Dept. of Entomology
Rutgers Univ., New Brunswick

New York Pest Control Association:
W. J. Parker, Secy.
366 Madison Ave., New York 17

(New York) Professional Exterminators Association:
Phillip Friedman, Secy.
4510 8th Ave., Brooklyn 20

Northwest Pest Control Association:
Ernest L. Levy, Secy.
2917 Lyndale Ave. S.
Minneapolis 8, Minnesota

Ohio Pest Control Association:
Bernard Berger, Secy.
534 W. Main St., Springfield

Oklahoma Pest Control Association:
J. Earl Griffin, Secy.
P. O. Box 176, Tulsa

Oklahoma Pest Control Association (Western Division):
Milton Oberstein, Secy.
904 N. Hudson, Oklahoma City

Pacific Northwest Pest Control Association:
W. B. West, Secy.
P. O. Box 455
Tacoma, Washington

Eastern Pennsylvania Pest Control Association:
Joseph C. Kopf, Secy.
213 S. 10th St., Philadelphia 7

Tennessee Pest Control Association:
Carrie Payne, Secy.
1603 Broad St., Nashville

Middle Tennessee Pest Control Assn.
Carrie Lee Payne, Secy.
1603 Broad St., Nashville

Texas Pest Control Association:
R. L. Showalter, Secy.
323 College Drive, Abilene

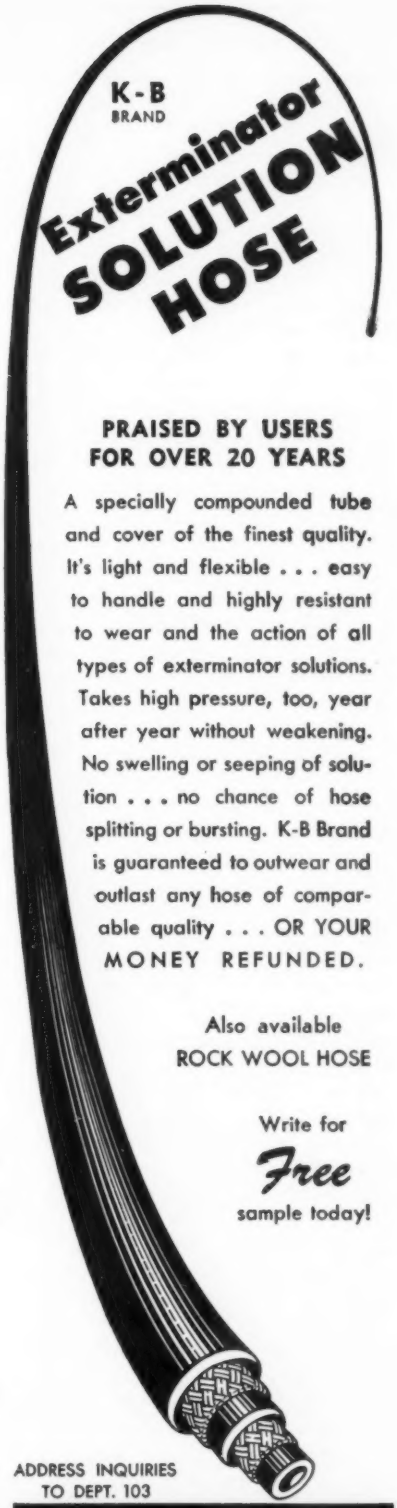
(Texas) Abilene Pest Control Assn.:
R. L. Showalter, Secy.
323 College Drive, Abilene

(Texas) Houston Pest Control Assn.
J. L. Howell, Secy.
2016 W. Alabama, Houston 6

Virginia State Pest Control Assn.
Orvis B. Griggs, Secy.
819 W. Broad St., Richmond

Washington, D. C. Pest Control Association:
Joseph Wineburgh, Secy.
Theodore Meyer Estate
1155 21st St. N. W.
Washington, D. C.

Wisconsin Pest Control Association:
Lewis B. Kelley, Secy.
Solvit Chemical Co.
Speedway Road, Madison 5



PRAISED BY USERS
FOR OVER 20 YEARS

A specially compounded tube and cover of the finest quality. It's light and flexible . . . easy to handle and highly resistant to wear and the action of all types of exterminator solutions. Takes high pressure, too, year after year without weakening. No swelling or seeping of solution . . . no chance of hose splitting or bursting. K-B Brand is guaranteed to outwear and outlast any hose of comparable quality . . . OR YOUR MONEY REFUNDED.

Also available
ROCK WOOL HOSE

Write for
Free
sample today!

ADDRESS INQUIRIES
TO DEPT. 103

BROADWAY
RUBBER CORPORATION
Louisville 2, Kentucky

PERSONAL BRIEFS

Last month I felt like the unwelcome salesman who was just easing through an opening door only to be jolted out on his brief case. The tidbits this month were all ready for the November post-convention issue, when the editorial department bluntly informed me, "There ain't room for your tripe. NPCA convention story more important!" Wasn't the October issue a beaut! Our ad manager says the day's not too far off when we'll put one like that out every month. *Then* there'll be a place for me in every issue come convention or no convention.

Hero of the Boston meet was Joe DeFiore of Chicago's Globe Exterminating. Quick thinking and brute strength on his part saved two PCO ladies who were waiting in a sightseeing bus parked at a 80 degree angle. When the bus suddenly started to roll backward down hill Joe, fortified by a pot of baked beans the night before, jettisoned himself into the cab, locked the brake and halted the descent . . . Rose Exterminator's Baltimore man, Walter Porter and Harry Studier, Guarantee Exterminating, Cleveland, are wasting their time in this business. They'd make a terrific TV team—Harry at the piano and Walter as tenor vocalist. Their pre-meeting duo stopped the show at "Mrs. Murphy's Chowder" session . . . Ask Dow's Larry Maxwell about his football career. He'll show you dynamic support for his figures . . . Hudson Sprayer's Dave Lewis was the usual charming host to a suite full of lounging delegates until the wee hours of the morning following Wednesday's banquet . . . Bob and Cathy Mesecher, from Burbank, California, made a fine couple on the dance floor . . . Outstanding example of beautifully performed, complicated dance intricacies were Jeannette and Joe Wineburgh from Washington, D. C. As agile and ingenious as a pair of high school sweethearts . . . Then there was the girl of the "century" in the Remington booth . . . Probably the happiest PCO in the hotel was Denver's Maurice Oser. Some time back we reported his two sons, Hessel and Julian, had been recalled to active military duty. Maurie beamed the news they'd both been released and had Julian, camera and all, with him to prove it . . . Ken and Mrs. Bell flew in from Amarillo, Texas, and were lucky enough to get out of Boston again Thursday before the big snow which covered Bean Town that night . . . Otto Orkin, looking fit as ever, brought a large representation to Boston including newly elected executive v-p, 26 year old Petty Bregman, who made a fine talk on safety during the program . . . Mort Levy was showing some of the liquid hospitality of Minneapolis' hotels in his room after members picked the "Twin City" for its 1953 convention spot . . . CSMA's Dr. H. W. Hamilton dropped in for a few minutes between hops making plans for his association's convention in Boston, come next June . . . Couldn't get any dirt on NPCA exec. secretary, Bill Buettner, this time. He was skirting from one meeting to another, not stopping long enough to give us the low-down on anything . . . PCE's Jack and Betty Benmosche were back on the job working as hard as ever in their booth. Jack is looking good, but the guy ought to take it easy. Trouble is, he loves it! . . . If you want to get into an argument, ask Nathan Sameth and Daniel Rose who's been in the business longer . . . "Lightest" news came from Montreal's Jack Rudick who was boasting how he's lost 30 pounds since we saw him last . . . Makeup man's jumping down my throat again. Says I've written too much already; that there's more informative stuff for these pages . . . So it goes.

Ten TIFA's To Cuba

Ten TIFA fog machines have been purchased by the Cuban government to combat mosquitoes in that country's infested flat lands.

Announcement of the purchase is made by Todd Shipyard Corporation's Combustion Equipment Division, TIFA manufacturers.

Pest Control Notebook

(from page 20)

be legally certain he is not purchasing debts, expensive court battles and liabilities legal or moral.

In one case I know of, a small business sold for $2500.00. Materials and equipment were worth about $600.00. Regular customers (monthly servicing accounts) totaled only $46.00 per month gross.

It wasn't long before the man discovered his mistake. His package purchase included some 200 unfulfilled termite contracts. 200 termite control jobs the former owner had done and collected for on a five year guarantee basis. The new owner, an honest man, is still making annual inspections and correcting the other man's low grade work at his own expense. He had stupidly paid $2500 for the privilege of paying off the other fellow's debts.

Good Will: Good will is a term to designate a number of intangible assets such as the established location of a firm, company name, telephone number, formulae, trade marks and regular customers.

There aren't many exterminating companies who are so well established or so highly advertised as to have names worth paying much for. The same is true of trade marks, labels, slogans and location of the business. Just the same it is best to have these items tied up to prevent others from using them in competition.

Established Maintenance Accounts: Most important assets of the average pest control firm are its regular, year-round commercial maintenance accounts: restaurants, hotels, hospitals, warehouses, factories, etc. These, too, are items of good will.

It has been my experience that the value of a purchasable company is based primarily on the volume of such service accounts which a new owner can reasonably expect to hold onto after the previous owner has dropped out of the picture.

Can you determine with reasonable accuracy the volume of such year-round service accounts that will stay with you month after month?

If not, then you are far better

off to start your own business. Leave such risky ventures to experienced hands who can afford the gamble.

Editor's Note: The author of this column has offered to write an article suggesting specific ways to PCOs to increase the sale value of their holdings. If such an article would have interest and value to you, please let us know.

How Does Wood Decay?

(from page 24)

Changes in wood properties are determined by the extent of decay and the specific effects of organisms producing them. In certain types of decay, definite odors are imparted to the rotting wood and generally some color modifications will occur.

One of the characteristic effects of incipient (early) decay is that it often imparts a pronounced brashness, or brittleness, to wood. This causes the infected material to break suddenly under stress, with but little deformation and with a more or less smooth and unsplintered fracture. Brashness can also be caused by other factors.

Reduction in strength, toughness, bending capacity and shock resistance occur in various stages of decay.

Natural Durability

Some species of wood are naturally durable. That is to say that even when exposed to ideal conditions for decay they will remain sound. A number of factors account for this relative resistance.

Certain of these durable species naturally contain inhibiting or antiseptic substances which prevent decay. The durability of woods will, of course, vary and some of the accepted more durable woods are: Osage orange, black locust, red juniper, bald cypress, white cedar, Western red cedar, red wood, catalpa, white oak, chestnut.

Stauffer Doubles BHC Capacity

Construction of facilities at Henderson, Nevada for doubling the current production of "high gamma" benzene hexachloride or lindane has been started by the Stauffer Chemical Co., San Francisco, Calif.

Pest Control Primer

(from page 28)

give control. When dealing with nests built on or in the ground, blow a dust made up of 5% DDT, 5% chlordane or 1% lindane directly into the entrance holes. Calcium cyanide dust can be puffed into holes to stun insects near the entrance. After an application of this type, the entrance holes should then be plugged. Residual sprays applied to screens and other potential insect landing places also helps.

Mud wasps (family Eumenidae): Also called thread-waisted wasps. Adults are about 1" long, black with orange-yellow markings. Slender structure connecting abdomen and thorax is quite long. Larvae feed on paralyzed spiders. Constructs mud nests on walls and ceilings of structures. Controls the same as for bald-faced hornets.

Allethrin Plant Goes Up

Carbide and Carbon Chemicals Co., New York City, subsidiary of Union Carbide & Carbon Corp. in West Virginia, has begun construction of a six million dollar plant to produce allethrin.

Production goals have been set high enough, company officials state, to meet both military and civilian needs of this synthetic insecticide, and predictions are that the economies of large scale production will make possible substantially lower costs on allethrin.

"RAT-GLU"

CATCHES RATS AND MICE LIKE Flies on Flypaper

NEEDS NO POISON OR BAIT

For Prices and Particulars Write To

JOSEPH GABOS

South Delsea Dr.. R.F.D. 6 N Vineland, N. J.

MICE-GLUE

GETS MICE LIKE FLYPAPER GETS FLIES

7½ lbs. $1.00 per lb. 25 lbs. $.90 per lb.
100 lbs. $.80 per lb.

BIRD-REPELLENT

Keep Pigeons, Starlings and Other Birds from Buildings

7½ lbs., $1.00 per lb. 25 lbs., $.90 per lb.
100 lbs., $.80 per lb.

PEST CONTROL CHEMICALS CO.

324 Broadway Write for details Buffalo, N. Y.

The Post Office No Longer Forwards Magazines

---So, if you change your address, be sure to send both your old address and new one

to

PEST CONTROL

1900 Euclid Bldg. Cleveland 15, Ohio

ASARCO BRAND

THALLIUM SULPHATE

FOR

PEST and RODENT CONTROL

AMERICAN SMELTING & REFINING CO.

120 Broadway New York 5, N. Y.

INDEX for 1951

Listing all the important feature articles, news stories, feature columns, book reviews, letters etc. that have appeared in PEST CONTROL during 1951

KEY: (f) feature article; (ns) news story; (c) feature column; (br) book review; (L) letter to the editor; (ed) editorial.

A

	Issue	Pg.
Abalene Inaugurates 5 Point Training Program (ns)	Feb	13
Accounts, How To Handle Delinquent (f)	Jun	10
Actidione New Rat Repellent (ns)	Jan	34
Airplane Spray Booklet, Issue (ns)	Oct	28
Aldrin, Dieldrin Circular (ns)	Aug	32
" -Dieldrin) New Termite Chemicals (f) by Delaplane	Sept	31
Allethrin Shows Long Residual (ns)	Oct	58
Am. Mosquito Control Assn. Invites PCO Membership (ns)	Apr	16
AMA Sanctions Wise Use of DDT (ns)	Aug	38
(Angoumois Grain Moth) in Primer (c) by A. Pescop	Nov	16
Ant Control Formulas Have Worked, These, by Prof. John V. Osmun (f)	Jul	20
" " , Imported Fire (ns)	Oct	60
Antidote, Parathion (ns)	Sep	34
Ants or Termites (differences between) (ns)	Feb	16
") A Day in the Life of a Serviceman (f)	Oct	18
" , Argentine) in Primer (c) by A. Pescop	Dec	28
" , Black Carpenter) in Primer (c) by A. Pescop	Dec	28
" , Carpenter) in Diagnostic Key (f)	Feb	26
" , Control of) What Do You Know About Thallium Sulphate? by P. E. Caron (f)	Aug	18
" , Little Black) in Primer (c) by A. Pescop	Dec	28
" , Pharoah's) in Primer (c) by A. Pescop	Dec	28
Arab Co., Scholarships Offered By (ns)	Jun	28
Arachnids, Some Notes on (f)	Jun	20
(Arsenic, White) Silvester The Silverfish, in Notebook (c) by Douglas Katos	Oct	32
Atomic-Bombed Community?, What Are the Potential Pest Control Problems In An, by Harold Elishewitz, Ph.D, ... Part I Jul 11, Part II Aug 14, Part III	Sep	22

B

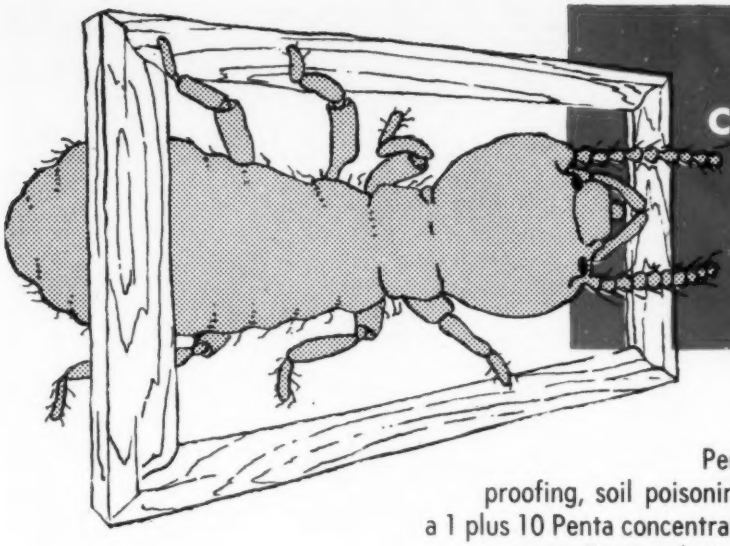
Bait Bulletin, Rat (ns)	Mar	36
" Material, Dog Meal Not Recommended As Warfarin (ns)	Dec	32
" Station Bulletin (ns)	Jun	32
(Bald-Faced Hornets) in Primer (c) by A. Pescop	Dec	28
Bats, DDT Powder Tracks (ns)	Sep	40
" Transmit Rabies (ns)	Jan	28
(Bedbugs, Control of) in Primer (c) by Douglas Katos	Sep	44
(Bee, Carpenter) in Diagnostic Key (f)	Feb	26
" ") in Primer (c) by A. Pescop	Dec	28
(Beetle, Ambrosia) in Diagnostic Key (f)	Feb	26
(Beetles) in Cargo Ships (f) by Monro	Dec	14
" , Furniture Carpet) in Fabric Pests (f) Part III by Douglass Burnett, Jr.	Jan	18
" , Varied Carpet) in Fabric Pests (f) Part III by Douglass Burnett, Jr.	Jan	18
Better Business Bureau Warning on Warfarin (ns)	Aug	34
Bidder Myth, The Low, by A. E. Ritt (f)	Jul	26
"Bids Too Variable" Fellton Tells Fla. PCA (ns)	Jul	42
" , Government) in NPCA convention (ns)	Dec	24
(Black Widow) in Spiders Notebook (c) by A. Pescop	Sep	28
Boxelders, Harvest Time For, Notebook by Norm. York (c)	Nov	12
") in North Central AAEE (ns)	May	16
Buettner Order to Hospital for 30-Day Rest (ns)	Dec	30
Building, Life Artery of—or How Termites Set Up Housekeeping, by H. R. Isherwood (f)	Mar	23
BE&PQ, USDA Reorganizes (ns)	Jul	38
Business, Wanted: Established Pest Control, Notebook by Jack Ratcliffe (c)	Dec	20
" Management) How To Handle Delinquent Accounts (f)	Jun	10

C

Cadaver Entomology (L)	Jul	6
" ") in Notebook (c) by Jack Ratcliffe	Mar	36
California, How To Make A "Seal-Off" For Dirt-Filled Porches In Southern, by Kenneth G. Scott (f)	Oct	35
" PC Licensees Protected During Military Serv. (ns)	Jun	34
" " " Loyalty Oath Proposed For (ns)	Apr	28
" PCO Convention, Legislation Chief Topic at (ns)	Apr	26
" , The Control of Dry-Wood Termites in Southern by Herbert R. Packard, Jr.	Feb	10
Campaigns, City (See "City Campaigns"		
(Carpenter Ants) in Ant Control Formulas (f) by Osmun	Jul	20
" , Bee, Xylocopa Control of the Large, by Dr. Thomas E. Snyder (c)	Sep	32
" Bees) in Primer (c) by A. Pescop	Dec	28
(Carpet Beetles) in Fabric Pests Survey (f) by Ferguson	Jun	14
" " , black) in Primer (c) by A. Pescop	Oct	30
" " , common) in Primer (c) by A. Pescop	Oct	30
" " , furniture) in Primer (c) by A. Pescop	Oct	30
" " , varied) in Primer (c) by A. Pescop	Oct	30
Cats the PCOs Biggest Competitor?, Are, by W. N. Troy (f)	Jul	14
CSMA Convention, Short Supply, Higher Prices Predicted for Insecticides at (ns)	Jan	32
" Mid-Year Meeting, Researchers Looking for Neutralizers, Dr. Decker Tells (ns)	Jun	16
	May	24
Chiggers, How to Control (f)	Oct	52
Chlordane Labeling Revised (ns)	Oct	16
") in Serviceman's Day (f)		
(Chlordane) in Control of Carpenter Bee (c) by Snyder	Sep	32
") Imported Fire Ant Control (ns)	Oct	60
") More About Scorpions (f) by Stuart R. Lyon	Sep	12
") in New Termite Chemicals (f) by Delaplane	Sep	31
") Spiders Aren't So Tough (c) by A. Pescop	Sep	28
") in Fabric Pests Survey (f) by Ferguson	Jun	16
") in Ant Control Formulas (f) by Osmun	Jul	20
City Campaigns (news stories about)		
California, Los Angeles	Jul	36
" " "	Dec	32
" , San Francisco	Feb	44
Colorado, Arvada	Jul	36
" , Denver	Jul	36
" , Granby	Sep	41
Illinois, Glen Ellyn	Dec	32
Missouri, Kansas City	Jul	36
New Jersey, Bergen County	Dec	32
" " , Hudson County	Dec	32
" " , Kearney	Aug	30
" " , North Arlington	Sep	41
" " , Weehawken	Oct	56
North Dakota, Fargo	Aug	30
Rhode Island	Oct	56
" " , Barrington	Jul	36
" " , Bristol	Aug	30
" " , Providence	Nov	28
" " , Westerly	Dec	32
Texas, Dallas	Jul	36
" , Waco	Feb	44
" , Van Zandt County	Dec	32
Virginia, Richmond	Sep	41
(Clothes Moths) in Primer (c) by A. Pescop	Nov	16
" ") in Fabric Pests Survey (f) by Ferguson	Jun	14
(Clover Mites, control of) in Suggestion Box (c)	Jun	22
(Cockroaches) in Serviceman's Day (f)	Oct	16
") in Primer (c) by Douglas Katos	Aug	26
" , as disease carriers) in Extract (c)	Nov	10
Coleoptera, Identification of Orders (c) by A. Pescop	Oct	30
CDC Rodent Courses in March (ns)	Feb	30
" Sanitation Courses (ns)	Mar	28
Community Fly Control, Location &, by J. H. Coffey (f)	May	18
(Confused flour beetles) in Primer (c) by A. Pescop	Oct	30
Correspondence Courses, PCO, by Prof. J. J. Davis (ed)	Jul	38
Course, Hunt (R.W.) Readies Mail (ns)	Apr	34
Coyotes With Cyanide, Control (ns)	Jun	20
Creeping Eruption (L)	Sep	6
" " , Control of Termite Operator's Itch, Notebook (c)	Jun	24
" "), Termite Operator's Itch, Notebook (c)	May	26

D

DDT, AMA Sanctions Wise Use of (ns)	Aug	38
" and Birds (L)	Nov	6
" , Dieldrin for Dog Ticks (ns)	Mar	23
" Keeps Homes Malaria-Free (ns)	Aug	32
" Powder, duPont 75% (ns)	Jan	28
" Powder Tracks Bats (ns)	Sep	40
") in Resistant Houseflies (f) by Bruce & Decker	Apr	9
") More About Scorpions, by Stuart R. Lyon (f)	Sep	14
") in New Termite Chemicals (f) by Delaplane	Sep	31
") Scorpions, by D. F. Martin (f)	Jun	20
") Silvester The Silverfish, Notebook (c) by Katos	Oct	32
") Stable Flies at the Seashore, by Elton Hansens (f)	Apr	12
") in Fabric Pests Survey (f) by Ferguson	June	16
") in Atom-Bomb (f) by Elishewitz	Jul	24
" Resistant Houseflies) in Extracts (c)	Aug	12
Death of a PCO, Case History: by J. J. Schueneman (f)	Jan	24
" " " " , on (L)	Feb	6
Defense, NPCA Advises PCOs on (ns)	Apr	32
" Program Outlined at Purdue Conference, Place of Country's' PCOs in, (ns)	Mar 14, Apr	22
") in Atom-Bomb (f) by Elishewitz	Jul 11, Aug 14, Sep	22
" , Civil) London's Pest Problems in World War II (L)	May	6
" ") in CSMA (ns)	Jun	32
Dieldrin As Mosquito Lavacide (ns)	Sep	40
" Circular, Aldrin (ns)	Aug	32
" for Dog Ticks, DDT (ns)	Mar	23
" for Fly Control in 1951, The Status of, by Dr. C. C. Compton (f)	Apr	18
") in Extracts (c)	Aug	12
") The Strip Method of Fly Control (f)	Apr	20
" -Aldrin) in New Termite Chemicals (f) by Delaplane	Sep	31
(Dilan) in Resistant Houseflies (f) by Bruce & Decker	Apr	11
(Disease) in Cats (f) by W. N. Troy	Jul	14
") .Bats Transmit Rabies (ns)	Jan	28
") Birds Carry Sleeping Sickness (ns)	Nov	28
" , Cockroaches as carriers of) in Extracts (c)	Nov	10
") Dr. Smith Reports on the Flood (f)	Sep	18
") Plague Fleas Found (ns)	Aug	44
") Termite Operator's Itch, Notebook (c)	May	26
") The (Kansas City, Mo.) Flood, by Dr. Gates (f)	Sep	16



CHEM-TOL
CONTROLS TERMITES

Easy-to-use - Effective - Economical

- Light in odor
- Stabilized Toxicity
- Forms an even crystalline deposit
- Uniform results

PCOs prefer CHEM-TOL, a 40% Pentachlorphenol Solution for termite proofing, soil poisoning and wood preservation. CHEM-TOL, a 1 plus 10 Penta concentrate is easily diluted to a 5% ready-to-use Penta solution which controls termites, powder post beetles and carpenter ants. It also controls wood rot and wood decay. For guaranteed satisfaction specify CHEM-TOL.

CIC

Chemical Insecticide Corporation
57 13th Street Brooklyn 15, N. Y.

WARNING!

Limited Penta stocks point to shortages this spring. Order now and be assured of your supply of CHEM-TOL.

Senco

SENCO PHOSPHORUS PASTE
Commonly called rat and roach paste. A specific application for the larger species of roaches. Also an attractive and effective rat poison.

10 lbs.	$ 6.00	50 lbs.	$19.00
25 lbs.	11.00	100 lbs.	35.00

SENCO ARSENIC SOLUTION
A 9 to 1 Concentrate. One gallon plus nine gallons of water, makes TEN GALLONS of a toxic drink for the rats and mice.

One gallon $6.50 Five gallons $25.00

SENCO MICROFINE ARSENIC
Kills rats and mice. Three times more toxic than ordinary powdered arsenic.

10 lbs.	$6.00	50 lbs	$13.00
25 lbs.	9.00	100 lbs.	22.00

POISON GRAINS FOR MICE.
Strychnine or Thallium treated Canary Seed, and other grains. Write for complete price list.

SENCO PRODUCTS ARE SHIPPED FREIGHT PREPAID
(In the U.S.A. Only)

2% Discount if check is sent with order.
Prices subject to change without notice.

SENNEWALD DRUG CO., Inc.
Established in 1855
2721 Chouteau Ave. St. Louis 3, Mo.

BLACKWELL'S

No. 250

NO-DRIP SPRAY GUN

$9.95

INSTANT ACTION
SHUTS OFF AT NOZZLE
NO DRIPPAGE
Proven by Leading Pest Control Men
Satisfaction Guaranteed

Write for Literature

BLACKWELL BURNER CO.
P. O. Box 4426
SAN ANTONIO 7, TEXAS

(Disease) in Atom-Bomb (f) by Elishewitz Jul 11, Aug 14, Sep 22
Dog Meal Not Recommended as Warfarin Bait Material (ns) Dec 32
Dumps, Compound 1080 for Initial Rat Control In, by Prof. John V. Osmun (f) Nov 9
" , Rodent Control In City (f) Dec 9

E

Eastern PCO Conference Short Course, Mature Approach Emphasized at 11th, by Dr. Arthur I. Bourne (ns) Mar 18
(England) London's Pest Problems In World War II (L) May 6
Equipment? Use DO-97, Buying (ns) Jun 28
" , Spraying) What Are The Potential Pest Control Problems In An Atomic-Bombed Community? by Harold Elishewitz, Ph.D (f) Jul 13
Ethics, Management, by Prof. J. J. Davis (f) Aug 9
(Ethyl Acetate) (Creeping Eruption) in Notebook (c) Jun 24
(Ethylene Dibromide) Soil Fumigation Can Eliminate Termite Infestation In Cold Joint Failure (f) Aug 29

F

Fabric Pest Damage and Recommended Control Measures, Survey On Incidence Of, by G. R. Ferguson (f) Jun 12
" Pests?, Can You Identify, Part III by Burnett (f) Jan 16
Film, Rural Rat (ns) Jun 34
" Termite Control (ns) Jul 36
(Firebrats) in Serviceman's Day (f) Oct 18
" in Notebook (c) by Douglas Katos Oct 32
Fish Eat Mosquito Larvae (ns) Oct 68
Fleas Found, Plague (ns) Aug 44
") Stivalius Pomerantzi (ns) Aug 12
") in Atomic-Bomb (f) by Harold Elishewitz (f) Sep 22
Flies At The Seashore, Stable, by Elton J. Hansens (f) Apr 12
" Can Fly Four Miles Daily (ns) Feb 20
" , Here Are Solutions To Insecticide Resistant House, by Dr. W. N. Bruce and Dr. G. W. Decker (f) Apr 9
") Dr. Smith Reports On The Flood (f) Sep 18
" and Dysentery, House) in Atom-Bomb (f) by Elishewitz Jul 13
" in Dead and Decaying Bodies, Breeding Of Flesh) in Atom-Bomb (f) by Harold Elishewitz Jul 12
Flood Area, Squill Aired To (ns) Aug 30
" , Dr. Smith Reports On The (Kansas City) (f) Sep 18
" , In The (Kansas City) (ed) Sep 5
" , The (Kansas City) by Lloyd R. Gates (f) Sep 16
" , Kansas) Kansans Hear Bell Officials (ns) Sep 46
Florida Civic Campaigns May Be Law Violation (ns) Jan 14
" Structural Board Deletes Rule 11 (ns) Dec 40
(Fly Breeding) in Atom-Bomb (f) by Elishewitz Jul 12
" Campaign, Publicity for a) Musca Publicica (ns) Aug 34
Fly Control In 1951, Status Of Dieldrin For by C. C. Compton (f) Apr 18
" " , Location & Community, by J. H. Coffey (f) May 18
" " , Strip Method Of (f) Apr 20
" ") Pest Control In Meat Packing Plants by Dr. Robert K. Somers (f) Mar 9
" " Chemicals, Techniques) CSMA Convention (ns) Jan 32
" Folder, Dairy (ns) Jul 41
" , Mosquito Control) North Central AAEE Meet (ns) May 16
" " Course In April) CDC Rodent Courses In March (ns) Feb 31
" Repellent, 2-C New (ns) Dec 36
" Resistance) in NPCA Convention (ns) Nov 22
Food Industry, Where the PCO Fits Into the, by Charles A. Clark (f) Feb 18
" Plants, Perimeter Control Of Rodents For Protection Of, by William Fitzwater, Jr. (f) Oct 9
Formulation, Preparing Your, by Patrick Connolly (f) Aug 20
Fraternity, Professional PCO (ns) Jun 28
Fumigation Can Eliminate Termite Infestation In Cold Joint Failure (f) Aug 29
") Case History: Death Of PCO, by Schueneman (f) Jan 24
") Gas Masks and Halide Lamps (L) Apr 6
") Insect Pests In Cargo Ships, by H. A. U. Monro (f) Dec 14
") On Death Of PCO (L) Feb 6
(Fungi) How Does Wood Decay? by Howard Olson (f) Part I, Part II Dec 24
") How To Make A Seal-Off For Dirt-Filled Porches In Southern California, by Kenneth Scott (f) Oct 35

G

Government Bid, Making A (ns) Dec 34
" Bids) in Termite Report at 19th Annual NPCA Convention In Boston (ns) Dec 24
(Grain Insects) in Primer (c) by A. Pescop Nov 16
(Granary Weevils) in Primer (c) by A. Pescop Oct 30

H

Halide Lamps, Gas Masks And (L) Mar 6
Haller (H. L.) New BE&PQ Asst. Chief (ns) Apr 30
" Chairman, ICPC Names Dr. (ns) Sep 46
(Hallucinations) 19th Annual NPCA Convention (ns) Nov 23
Health Inspectors "Advance Men" For Sanitation Industry, Buchanan Tells NSSA Meet (ns) Jul 22
Hemiptera, Identification of Orders (c) by Douglas Katos Sep 44
Hockenyos First "Man Of Year", George L. (ns) Nov 26
(Hookworm Larvae) in Notebook (c) Jun 24
(Hornets, Bald-Faced) in Primer (c) by A. Pescop Dec 28
(Horseflies) Advise Pyrenone For Tabanids (ns) Aug 34
(Houseflies) Geiger Counters Stalk Pests Members Told At Pac. AAEE Meet (ns) Aug 32
" , DDT Resistant) in Extracts (c) Aug 12
(HCN) in Cargo Ships (f) by Monro Dec 14
Hymenoptera Catalog (ns) Dec 34
" , Identification of Orders (c) by A. Pescop Dec 28

I

Identification of Orders, Primer by Douglas Katos (c)
No. 1, Orthoptera Aug 26
No. 2, Hemiptera Sep 44
No. 3, Coleoptera, by A. Pescop Oct 30
No. 4, Lepidoptera, by A. Pescop Nov 16
No. 5, Hymenoptera, by A. Pescop Dec 28
Income Tax, How PCOs Can Save On, by Betty Gouch (f) Oct 14
(Indian-Meal Moths) in Primer (c) by A. Pescop Nov 16
Indianapolis Is Solving Its Rodent Control Problem, by Jay W. Hundley (f) May 9
Insect? What is an, Primer (c) Jan 36
Insecticide Resistant House Flies, Here Are Some Solutions To, by Dr. W. N. Bruce and Dr. G. C. Decker (f) Apr 9
" , Wasp Venom May Be (ns) Oct 60
Insecticides At CSMA Convention, Short Supply, Higher Prices Predicted For (ns) Jan 32
" , Using Safely, by Dr. F. C. Bishopp (f) Jan 9
") Preparing Your Formulation, by Connolly (f) Aug 20
(Insects, Structure Of) in Primer (c) Feb 38
Insurance Coverage, Fogging (ns) May 32
" " , Wider (ns) Oct 56

K

Kansas City, Fly Count Down In (ns) Nov 36
" " Mo.,) The Flood, by Dr. Lloyd R. Gates (f) Sep 16
" " ") Dr. Smith Reports On the Flood (f) Sep 18
Kalotermes In Shipped Lumber (ns) Oct 40

L

Labeling Revised, Chlordane (ns) Oct 52
" Warfarin (L) Jul 6
(Lady Beetles) in Primer (c) by A. Pescop Oct 30
" Bugs Elect Officers (ns) Jan 26
" " Name Mrs. Howell) NPCA Convention (ns) Nov 25
Larvacide, Dieldrin As Mosquito (ns) Sep 40
"), TDE Controls Lake Gnats (ns) Aug 36
Larvae and Pupae, Nymphs, in Primer (c) Mar 24
Law, Fla. Civic Campaigns May Be Violation Of (ns) Jan 14
" Violation) Tenn. Prosecutes 16 (ns) Mar 28
Laws, Insecticide (ns) Jul 32
Legislation Chief Topic At California PCO Convention by James Joseph (ns) Apr 26
") Bills Up Insecticide Fees (ns) Apr 32
") Insecticide Laws (ns) Jul 32
") Purdue Conference Report from March issue (ns) Apr 24
") Syracuse's PCO Ordinance by Dr. C.A. Sargent (f) May 12
") Washington Pesticide Law (ns) Aug 42
Lepidoptera, in Primer (c) by A. Pescop Nov 16
(Lice) in Atom-Bomb (f) by Elishewitz Aug 14
License Fees, High (L) Jul 45
(" ") Financial Tributes (ed) Jun 5
Licensees Protected During Military Service, Calif. PC (ns) Jun 34
Lindane Booklet, Cal-Spray (ns) Jun 32
" Bulletin, Pennsalt Issues (ns) Jun 34
" -Methoxychlor Combine (ns) Feb 32
Loyalty Oath Proposed For Calif. PC Licensees (ns) Apr 28

M

Mailing Regulations, Warfarin (ns) May 29
Maintenance Up 6%, Vehicle (ns) Jul 40
Malaria-Free, DDT Keeps Homes (ns) Aug 32
Man Of Year?, Who Will Be Pest Control Jun 36 Jul 23 Aug 24 Sep 14
Management Ethics, by Prof. J. J. Davis (f) Aug 9
Manpower Shortages Have On Pest Control Industry?, What Effect Will (f) Mar 10
(Masked Hunters, Control Of) in Primer (c) by Katos Sep 44
Masks and Halide Lamps, Gas (L) Mar 6
Meat Packing Plants, Pest Control In Federally Inspected, by Robert K. Somers (f) Mar 9
(Mediterranean Flour Moth) in Primer (c) by Pescop Nov 16
Metamorphosis, Wrong (L) Apr 6
(Methyl Bromide) in Cargo Ships (f) by H.A.U. Monro Dec 14
" ") On "Death Of a PCO" (L) Feb 6
" ") Gas Masks and Halide Lamps (L) Apr 6
" " poisoning) in Case History: (f) by J. J. Schueneman Jan 24
(Mice, Pigeons and) in Purdue Conference Report (ns) Mar 16
Mites Face New Enemy (ns) Sep 34
") in Notebook (c) by Ratcliffe Jul 18
") in Atom-Bomb (f) by Elishewitz Aug 14
Miticide, Introduce New (ns) Mar 32
Mosquito Book Ready (ns) Nov 34
" Booklet, Domestic (ns) Sep 34
" Larvacide, Dieldrin As (ns) Sep 40
" Larvae, Fish Eat (ns) Oct 68
" Control, Fly) in North Central AAEE Meets (ns) May 16
" Course In April, Fly(CDC Rodent Courses in March (ns) Feb 31
") Dr. Smith Reports On The Flood (f) Sep 18
") London's Pest Problems In World War II (L) May 44
") in Atom-Bomb (f) by Elishewitz Sep 26
Moth Balls Almost Fatal (ns) Jun 28
(Moths) in Cargo Ships (f) by H. A. U. Monro Dec 14
" , Buffalo) in Fabric Pests (f) by Burnett Jan 16
(Mud Wasps) in Primer (c) by A. Pescop Dec 43

N

NPCA Advises PCOs On Defense (ns) Apr 32
" Convention) Romantic Boston (ns) Jul 18
" Conventions, Why I Attend (ns) Aug 40
" Convention Time Is Town Meetin' Time by Bartlett Eldredge (ed) Sep 29
") Latest On Speakers And Subjects Released (ns) Sep 36
" Convention Delegates Meeting in Historic Boston, Bean Town Going "All Out" For 19th (ns) Oct 42
" Forward Looking By The, by J. Edwin Sameth (ed) Oct 6
" Officers and Regional Vice-Presidents, Pictures of Oct 42-46
" -Public Relations) Another Step (ed) Nov 5
" Holds 19th Annual Convention In Boston (ns) Nov 19
" Boston Meet, Slab-Type Construction Revealed As Headache to TOs At (ns) Dec 23

NPCA Convention Booth Exhibitors (ns) ..... Dec 36
" Regional Vice-Presidents, Directors, Elect (ns) ... Dec 18
NPA Ban Order, Chemicals In (ns) ..... Feb 14
") Buying Equipment? Use DO-97 (ns) ..... Jun 28
NSSA In New Orleans (ns) ..... Dec 34
" , Mayor Proclaims "Sanitation Week" For (ns) ... May 28
" Convention Report (ns) ..... Jul 22
NSDA President, Chapin (R. B.) Elected (ns) ..... Sep 38
Neutralizers, Decker Tells CSMA Meeting,
Researchers Looking For (ns) ..... Jun 16
Nymphs, Larvae, Pupae in Primer (c) ..... Mar 24

O

OPS May Issue Subpoenas (ns) ..... May 29
Ordinance, Syracuse's PCO, by Dr. C. A. Sargent (f) ..... May 12
Orkin Meet, 200 Attend (ns) ..... Feb 30
Orthoptera, in Primer (c) by Katos ..... Aug 26

P

Packaging Profitable For Rockford PCO, Retail,
by Henry Huff (f) ..... Oct 24
Parathion Antidote (ns) ..... Sep 34
Penn Ag. Finds Sound Waves Effective For PC (ns) ..... Feb 14
Pentachlorophenol Data Offered (ns) ..... Sep 41
Pest Control In Federally-Inspected Meat Packing
Plants, by Dr. Robert K. Somers (f) ..... Mar 9
" " Man Of The Year", Hockenyos Picked (ns) Nov 26
" " Problems In An Atomic Bombed Community?
What Are The Potential, by Dr. H. Elishewitz
Jul 11, Aug 14, Sep 22
Pigeons, Rubber Lizards Scare (ns) ..... Feb 20
" and Mice) Purdue Conference Report (ns) ..... Mar 16
(Plague) in Atom-Bomb (f) by Elishewitz ..... Sep 24
(Poliomyelitis) in Extract (c) ..... Nov 10
("Pomerantzi, Stivalius") NPCA Boston Convention (ns) .. Nov 21
Porches In Southern California, How To Make "Seal-Off"
For Dirt-Filled, by Kenneth Scott (f) ..... Oct 35
Powder-Post Termites Throw Yankee PCO, in Notebook,
by A. Pescop (c) ..... Feb 16
Price-Control (ns) ..... May 29
" Regulations For Services (ns) ..... Jul 34
Prices Can Probably Be Upped Buettner Tells Ill. PCA (ns) .. Jun 38
" Frozen, Say Service (ns) ..... Mar 12
") "Bids Too Variable" Fellton Tells Fla. PCA (ns) .. Jul 42
Pricing Mean To PC Industry?, What Does Cut-Rate,
by A. E. Ritt (f) ..... Jun 9
Priority Ratings, NPA Issues Change Of Ownership (ns) .. Dec 18
Providence (Rhode Island) Continues Rat Campaign (f) ... Nov 28
Psychoneurotics? in Notebook (c) by Ratcliffe ..... Jul 18
(Public Relations) Serviceman's Day (f) ..... Oct 20
" ") Another Step (ed) ..... Nov 5
" ") Forward Looking By NPCA, by Sameth (ed) Oct 6
" ") Management Ethics, by J. J. Davis (f) ... Aug 10
" ") NPCA Boston Convention (ns) ..... Nov 20
" ") PR Is Professional (ed) ..... Oct 5
Pupae, Nymphs, Larvae, in Primer (c) ..... Mar 24
Purdue Bulletins Available (ns) ..... Jul 36
" Conference, Place of Country's PCOs In Defense
Outlined At 15th Annual (ns) ..... Mar 14
" " , (continued from March issue), Report On
(ns) ..... Apr 22
" NPCA-Awards, 2 Receive (ns) ..... Jan 28
" University 4-Year PCO Curriculum (ns) ..... Jul 32
Pyrenone For Tabanids, Advise (ns) ..... Aug 34

Q

Questions & Answers I, II, III and IV in Primer (c)
by Ratcliffe ..... Apr 36, May 22, Jun 22, Jul 22

R

(Rabbit Repellents) Purdue Confo. (ns) ..... Apr 22
Rat Bait Bulletin (ns) ..... Mar 36
" Cafeteria Has Deadly Menu (ns) ..... Oct 58
" Campaign, Providence Continues (ns) ..... Nov 28
" Control In Dumps, 1080 For Initial, by Osmun (f) .... Nov 9
" ") In Packing Plants (f) by Dr. R. K. Somers .. Mar 9
" Film, Rural (ns) ..... Jun 34
" Repellent, New Actidione (ns) ..... Jan 34
Rats And Warfarin, PHS Reports On Norway (ns) ..... Mar 34
" Defy Gravity, in Notebook (c) by Ratcliffe ..... Aug 22
" 70%, Decreases (L) ..... Jul 6
" , Steel Wool & Cement For (ns) ..... Jan 14
") in Rodent (f) by Wm. D. Fitzwater ..... Oct 9
") Kansas City Flood, by Dr. Lloyd R. Gates (f) ..... Sep 16
") in Atom-Bomb (f) by Elishewitz ..... Sep 22
" , Norway) in Purdue Conference (ns) ..... Apr 22
(Real Estate) Court Ruling On Termites (ns) ..... Feb 16
(Red Squill) Kansas City Flood, by Dr. Gates (f) ..... Sep 16
" " Research) in Purdue Conference (ns) ..... Apr 22
Repellent, Actidione New Rat (ns) ..... Jan 34
" , 2-C New Fly (ns) ..... Dec 36
(Repellents, Rabbit) in Purdue Confo. (ns) ..... Apr 22
Resistant Houseflies, Here Are Some Solutions to
Insecticide—, by Drs. W. N. Bruce and G. C. Decker (f) Apr 9
(Roach Control) in Meat Packing Plants (f) by Dr. Somers Mar 9
(Roaches, American) in Notebook (c) by Ratcliffe) ..... Aug 22
" , German) in Extracts (c) ..... Aug 12
Rodent Control In City Dumps (f) ..... Dec 9
" " Problem, Indianapolis Is Solving Its,
by Jay Hundley (f) ..... May 9
" ") Syracuse's PCO Ordinance, by Sargent (f) May 12
" Courses In March, CDC (ns) ..... Feb 30
" Manual, WARF Issues (ns) ..... Nov 34
Rodents For The Protection Of Food Plants, Perimeter
Control Of, by William D. Fitzwater (f) ..... Oct 9
") London's Pest Problems In World War II (L) .. May 6
") in NPCA Boston Convention (ns) ..... Nov 21
Rohwer (Dr. S. A.) Assists In ARA Activities (ns) ..... Feb 30
" Shocks PC Industry, Death Of Dr. S. A. (ns) ..... Mar 26

S

Safety, ABCs Of in Notebook (c) by Katos ..... Jan 40
" 12 Check Points For Vehicle, by C. H. Beal (f) ... Jan 14
") in Case History: (f) by J. J. Schueneman ... Jan 24
") in NPCA Boston Convention (ns) ..... Nov 23
") On "Death Of PCO" (L) ..... Feb 6
") Using Insecticides Safely, by Dr. F. C. Bishopp (f) Jan 9
Salesman Compensation Report (ns) ..... Oct 50
" Training) in NPCA Boston Convention (ns) .... Nov 23
Sanitation Courses, CDC (ns) ..... Mar 28
" Pamphlet, Ship (ns) ..... Dec 32
") in Fly Control (f) by J. H. Coffey ..... May 18
") in Rodent Control (f) by Wm. D. Fitzwater. Oct 9
") in Meat Packing (f) by Dr. R. K. Somers ... Mar 9
") in Food Industry (f) by Charles A. Clark .... Feb 18
" , Bakery) in Purdue, Confo. (ns) ..... Apr 22
" , Environmental) in Indianapolis (f) by Hundley May 9
(Saw-Toothed Grain Beetle) in Primer (c) by Pescop .. Oct 30
(Scabies) in Atom-Bomb (f) by Elishewitz ..... Aug 14
Scholarships Offered By, Arab Co. (ns) ..... Jun 28
Scorpions, by D. F. Martin (f) ..... Jun 18
" , More About, by Stuart Lyon (f) ..... Sep 11
" , Stahnke On (L) ..... Sep 6
"Seal-Off" For Dirt Filled Porches In Southern
California, How To Make A. by Kenneth Scott (f) ... Oct 35
Serviceman, A Day In The Life Of (f) ..... Oct 16
" Training) in NPCA Boston Convention (ns) ... Nov 23
Ship Pests Booklet (ns) ..... Jul 32
" Sanitation Pamphlet (ns) ..... Dec 32
Ships, Insect Pests In Cargo, by H. A. U. Monro (f) .... Dec 12
Silverfish, Silvester The, (Notebook) by D. Katos (c) .... Oct 32
Slab-Type Construction Revealed As Headache To TOs At
NPCA Boston Meet (ns) ..... Dec 23
Snails, Tree (L) ..... Nov 6
Snyder Retires, Dr. (ns) ..... Jul 32
(Sodium Fluoride) in Notebook (c) by D. Katos ..... Oct 32
Soil Fumigation Can Eliminate Termite Infestation In
Cold Joint Failure (f) ..... Aug 29
" " (Creeping Eruption) (L) ..... Sep 50
" Treatment) in Notebook (c) ..... Jun 24
Soils In Termite Control, Importance Of, by J. L. Howell
Part I, II ..... Nov 31, Dec 26
Southern PCO Conference in Jan., 13 States Rep. at 11th
(ns), by O. W. Rosewall ..... Mar 20
Spiders Aren't So Tough, Notebook by Pescop (c) ..... Sep 28
") Some Notes On Arachnids (f) ..... Jun 20
Stain Removal Booklet (ns) ..... Aug 22
(Stains) Wood Decay (f) Part II, by Howard Olson .... Dec 24
"Standard Techniques Needed" Buettner Tells Tenn.
PCA (ns) ..... Oct 70
(Stored Grain Insects) in Cargo Ships (f) by Monro ..... Dec 12
" Products Insects) in Atom-Bomb (f) by Elishewitz Sep 24
Strip Method Of Fly Control (f) ..... Apr 20
" Treatment, Fly Control) in CSMA Meet (ns) ..... Jan 34
Syracuse's PCO Ordinance, by Dr. C. A. Sargent (f) .... May 12

T

Tabanids, Advise Pyrenone For (ns) ..... Aug 34
Tax Deductible, Termite Damage Not (ns) ..... Dec 26
1080 For Initial Rat Control In Dumps, by J. V. Osmun (f) Nov 9
") Decreases Rats 70% (L) ..... Jul 6
") in Rodent (f) by Wm. D. Fitzwater ..... Oct 10
") Rodent Control In City Dumps (f) ..... Dec 9
Termite Control, Importance Of Soil In, Part I, II,
by Jerome Howell ..... Nov 31, Dec 26
" Control Film (ns) ..... Jul 36
" " New Chemicals We've Tried For,
by William K. Delaplane (f) ..... Sep 31
" Damage Not Tax Deductible (ns) ..... Dec 26
" Infestation In Cold Joint Failure, Soil Fumigation
Can Eliminate (f) ..... Aug 29
" Operators At NPCA Boston Meet, Slab-Type Con-
struction Revealed As Headache To (ns) .. Dec 23
" Operator's Itch, Notebook (c) ..... May 26
" " " , Control Of, Notebook (c) ..... Jun 24
" " ") Creeping Eruption (L) ..... Sep 6
" Racket Attempted In Roanoke, Va., Daring (ns) .... Feb 22
" , Wholesale Death Of A West Indian, Borer Lines
by Dr. Thomas E. Snyder (c) ..... Nov 31
" Ants Or (ns) ..... Feb 16
" Control Of Subterranean (Booklet) (ns) ..... Feb 16
" Court Ruling On (ns) ..... Feb 16
" In Southern California, Control Of Dry-Wood,
by Herbert Packard (f) ..... Feb 9
" Set Up Housekeeping, Life Artery Of A Building
Or How, by H. R. Isherwood (f) ..... Mar 23
" Throw Yankee PCO, Powder Post, Notebook
by Pescop (c) ..... Feb 16
") in "Seal-Off" (f) by Kenneth G. Scott ..... Oct 35
") Kalotermes In Shipped Lumber (ns) ..... Oct 40
" Subterranean) in Diagnostic Key (f) ..... Feb 26
" ") in Sub-Control (f) by Dr. Snyder. Feb 28
Thallium Sulphate?, What Do You Know About,
by P. E. Caron (f) ..... Aug 18
Ticks, DDT, Dieldrin For Dog (ns) ..... Mar 23
(Toxicity) in 1080 Rat Control In Dumps (f) by Osmun .. Nov 9
") DDT and Birds (ns) ..... Nov 6
") ICPC Releases Opinion On Health Hazards Of
Vaporizers (ns) ..... Nov 34
" , Dieldrin) in Fly Control (f) by Dr. Compton .. Apr 18
" of Warfarin) in Purdue Conference (ns) .... Mar 16
" " ") PHS Reports On Norway Rats
and Warfarin (ns) ..... Mar 34
" , Responsibilities For) CSMA Convention Report Jan 34
") Using Insecticides Safely, by Dr. Bishopp (f) .. Jan 10
Training Program, Abalene Inaugurates Company (ns) .. Feb 13
(Trapping) in Rodent (f) by Wm. D. Fitzwater ..... Oct 28
2,4,5-T Controls Mesquite (ns) ..... Jul 41
(Typhoid, Roaches as carriers of) in Extract (c) ..... Nov 10

V

Vaporizers, ICPC Releases Opinion On Health Hazards Of (ns) ..... Nov 34
") Sues For Patent Infringement (ns) ..... Sep 38
Vehicle Maintenance Up 6% (ns) ..... Jul 40
" Safety, 12 Check Points For by Beal (f) ..... Jan 14

W

Warfarin Bait Material, Dog Meal Not Recommended As (ns) ..... Dec 32
" , BBB Warning On (ns) ..... Aug 34
" Credits Set Stra'ght (ns) ..... May 28
" Labeling (L) ..... Jul 6
" , PHS Reports On Norway Rats And (ns) ..... Mar 34
" Spoilage (ns) ..... Oct 60
" Warning, Green Sounds (ns) ..... May 30
") in NPCA Boston Convention (ns) ..... Nov 21
") in Rodent (f) by Wm. D. Fitzwater ..... Oct 10
") Providence Continues Rat Campaign (f) ..... Nov 28
" Rodents May Taste) in Purdue Conference (ns) ..... Mar 14
" Shipping Regulations (ns) ..... May 29
" Toxicity Of) in Purdue Conference (ns) ..... Mar 16
(Wasps, Mud) in Notebook (c) by A. Pescop ..... Dec 43
(Water Bugs, Control Of) in Notebook (c) by Pescop ..... Sep 44
West Indian Termite, Wholesale Death Of A, (Borer Lines) by Dr. Thomas E. Snyder (c) ..... Nov 31
WARF Gives Fish & Widllife $10,000 Grant (ns) ..... Oct 52
Wood-Boring Insects, Penn PCO Short Course To Feature (ns) ..... Feb 30
Wood Decay? I, II. How Does, by H. Olson (f) ..... Oct 40 Dec 24
Wood-Destroying Pests, Diagnostic Key To More Common Structural (f) ..... Feb 26
(Wood) in Life Artery (f) by H. E. Sherwood ..... Mar 23
") in Dry Wood Termites (f) by H. R. Packard ..... Feb 9
" -rotting fungi) in Wood Decay (f) by H. Olson ..... Dec 24
" Treating) in Termite Report at NPCA Meet ..... Dec 23
Worms Crawl In, The, in Notebook by Ratcliffe (c) ..... Mar 36

Y

Yeager Elected '52 President, NPCA Convention (ns) ..... Nov 19

AUTHOR INDEX

Beal, C. H., "12 Check Points For Vehicle Safety" ..... Jan 14
Bishopp, Dr. F. C., "Using Insecticides Safely" ..... Jan 9
Bourne, Dr. Arthur I., "Mature Approach Emphasized at 11th Eastern PCO Short Course" ..... Mar 18
Bruce, Dr. W. N., "Here Are Some Solutions To Insecticide Resistant House Flies" ..... Apr 9
Burnett, Douglass, Jr., "Can You Identify Fabric Pests?" Part III ..... Jan 16
Caron, P. E., "What Do You Know About Thallium Sulphate?" ..... Aug 18
Clark, Charles A., "Where The PCO Fits Into The Food Industry" ..... Feb 18
Coffey, J. H., "Location & Community Fly Control" ..... May 18
Compton, Dr. C. C., "The Status of Dieldrin for Fly Control in 1951" ..... Apr 18
Connolly, Patrick J., "Preparing Your Formulation" ..... Aug 20
Davis, Professor J. J., "PCO Correspondence Courses" ..... Jul 38
"Management Ethics" ..... Aug 9
Decker, Dr. George C., "Here Are Some Solutions To Insecticide Resistant House Flies" ..... Apr 9
Delaplane, William K., Jr., "New Chemicals We've Tried For Termite Control" ..... Sep 31
Eldredge, Bartlett W., "Convention Time Is Town Meetin' Time" ..... Sep 29
Elishewitz, Dr. Harold, "What Are The Potential Pest Control Problems In An Atomic-Bombed Community?" Part I Jul 11, Part II Aug 14, Part III Sep 22
Ferguson, G. R., "Survey On The Incidence of Fabric Pest Damage and Recommended Control Measures" ..... Jun 12
Fitzwater, William D., Jr., "Perimeter Control of Rodents For The Protection Of Food Plants" ..... Oct 9
Gates, Dr. Lloyd R., "The (Kansas City, Mo.) Flood" ..... Sep 16
Gouch, Betty Lee, "Here's How PCOs Can Save On Income Tax" ..... Oct 14
Hansens, Elton J., "Stable Flies At The Seashore" ..... Apr 12
Herbert, Paul, "Extracts From Experiment Station Reports" ..... Aug. 12, Nov 10
Howell, Jerome L., "Importance of Soils In Termite Control" ..... Part I Nov 31, Part II Dec 26
Huff, Henry, "Retail Packaging Is Profitable For This Rockford PCO" ..... Oct 24
Hundley, Jay W., "Indianapolis Is Solving Its Rodent Control Problem" ..... May 9
Isherwood, H. R., "Life Artery Of A Building or How Termites Set Up Housekeeping" ..... Mar 23
Joseph, James, "Legislation Chief Topic At California PCO Convention" ..... Apr 26
Kates, Douglas, "ABC's Of Safety" ..... Jan 40
"Identification of Orders 1 — Orthroptera" ..... Aug 26
"Identification of Orders 2 — Hemiptera" ..... Sep 44
"Silvester The Silverfish" ..... Oct 32
Lyon, Stuart R., "More About Scorpions" ..... Sep 11
Martin, D. F., "Scorpions" ..... Jun 18
Monro, H. A. U., "Insect Pests In Cargo Ships" ..... Dec 12
Olson, Howard, "How Does Wood Decay?" ..... Oct 40, Part II Dec 24
Osmun, Professor John V., "These Ant Control Formulas Have Worked" ..... Jul 20
"Compound 1080 For Initial Rat Control In Dumps" ..... Nov 9
Packard, Herbert R., Jr., "The Control of Dry-Wood Termites In Southern California" ..... Feb 9
Pescop, A., "Powder Post Termites Throw A Yankee PCO" ..... Feb 16
"Questions And Answers IV" ..... Jul 22
"Spiders Aren't So Tough" ..... Sep 28
"Identification of Orders 3 — Coleoptera" ..... Oct 30
"Identification of Orders 4 — Lepidoptera" ..... Nov 16
"Identification of Orders 5 — Hymenoptera" ..... Dec 28
Ratcliffe, Jack, "The Worms Crawl In" ..... Mar 36
"Questions and Answers I" ..... Apr 36
"Questions and Answers II" ..... May 22
"Questions and Answers III" ..... Jun 22
"Psychoneurotics?" ..... Jul 18
"Letters From 2 PCOs" ..... Aug 22
"Wanted: Established Pest Control Business" ..... Dec 20
Ritt, A. E., "What Does Cut-Rate Pricing Mean To The Pest Control Industry?" ..... Jun 9
"The Low Bidder Myth" ..... Jul 26
Roark, Dr. R. C., "Patents Relating to Pest Control" Jan 41, Mar 40, May 24, Jul 16, Sep 43, Dec 10
Rosewall, Dr. O. W., "Thirteen States Represented at 11th Southern PCO Conference in January" ..... Mar 20
Sameth, J. Edwin, "Forward Looking by the NPCA" ..... Oct 6
Sargent, Dr. C. A., "Syracuse's PCO Ordinance" ..... May 12
Schueneman, J. J., "Case History: Death of a PCO" ..... Jan 24
Scott, Kenneth G., "How To Make A 'Seal-Off' For Dirt-Filled Porches In Southern California" ..... Oct 35
Smith, Dr. Roger C., "Dr. Smith Reports On The Flood" ..... Sep 18
Snyder, Dr. Thomas E., "Roadblocks For Sub Control" ..... Feb 28
"Control Of The Large Carpenter Bee, Xylocopa" ..... Sep 32
"Wholesale Death Of A West Indian Termite" ..... Nov 31
Somers, Dr. Robert K., "Pest Control In Federally-Inspected Meat-Packing Plants" ..... Mar 9
Troy, William, "Are Cats The PCOs Biggest Competitor?" Jul 14
"A Day In The Life Of A Serviceman" ..... Oct 16
York, Norman, "Harvest Time For Boxelders" ..... Nov 12

OBITUARIES

Ambrose, Lewis ..... Aug 46
Burdge, Anna G. ..... Aug 46
Crampton, Dr. Guy C. ..... Dec 50
Favreau, Mrs. Claude ..... Jan 42
Hall, Harry J. ..... Oct 74
Hardcastle, Yellot F. ..... Mar 34
Knobla, Carl ..... Nov 42
Lovejoy, Guy Raymond ..... Jan 42
Mason, David F. ..... Aug 46
Rader, George A. ..... Nov 42
Ratner, William B. ..... Aug 46
Rohwer, Dr. S. A. ..... Mar 26
Rudisill, William H. ..... Jul 45
Sibert, T. C. ..... Nov 42
Sweadner, Dr. Walter B ..... Mar 34
White, William H. ..... May 46

ORGANIZATION NEWS

Associations, List Of State and National (also Names and Addresses of Secretaries) ..... Dec 41
(California) PCO's Revel In Calexico ..... Feb 42
California (PCA) District, Sturtevant Heads ..... Feb 44
Canada PCA Readies Conference ..... Apr 38
Connecticut (PCA) Meet, 13 Suppliers At New England ..... Jan 38
" PCAers Attend Banquet ..... Jul 42
" PCA Fetes Ladies ..... Nov 38
D. C. & Virginia (PCA) Joint Meet, "Find Sane Controls" Fenwick Tells ..... May 42
Washington D. C. PCA, Display Of ..... Jun 38
D. C. PCA Elects (William E.) Roll ..... Jun 40
Eastern Pennsylvania PCA Meet, War Problems Key ..... Jan 30
" " PCAers Pick Fleming (D.M.), 27 ..... Feb 42
" " PCA Feast, Sameth Address 46 At ..... Aug 42
" " PCAers Plan Clinic At Regular Dinner Meet ..... Oct 70
Florida PCA, Ft. Lauderdale For ..... May 38
" PCA, Bids Too Variable, Fellton Tells ..... Jul 42
Georgia PCA Offers Aid To Defense Program ..... Feb 40
" PCA Hears About Atom War ..... Jun 40
" PCA Names Pitts (Luther) ..... Jul 44
Illinois PCA Hears Praise From Chicago Realtor ..... Mar 38
" PCA Pledges Defense Aid ..... May 38
" PCA, Prices Can Probably Be Upped Buettner Tells ..... Jun 38
Indiana PCA, Kotler (Louis) Pros Law To ..... Jan 31
" PCA Prexy, Draper 1951 ..... Jun 42
" PCA, Schneider Speaks To ..... Jul 42
Iowa (PCA) 2-Day Clinic In March ..... Feb 42
" PCA, Dennis Leads ..... Jul 44
Iowans (PCA) To Meet Sept. 27-28 ..... Sep 46
Iowa (PCA) Meet, "Organize To Produce" Is Buettner Keynote At ..... Nov 38
Kansas T & PCA, Hawks (U. O.) Heads ..... Feb 42
" T & PCA Issues Warning ..... Jul 42
Kansans (T & PCA) Hear Bell Officials ..... Sep 46
Kansas (T & PCA) Has 3rd Anniversary ..... Oct 72
" (T & PCA) Plans Outstanding Meet ..... Nov 38
Los Angeles PCO's Prexy, Mesecher (Robert) ..... Feb 40
Louisiana PCA Chooses '51 Officers ..... Apr 38
Marylanders (PCA) Choose (Wesley) Grahn ..... Jun 40
Maryland PCA, Porter (Emory) Leads ..... Aug 24
Missouri PCA Pres., Danella (A. J.) Becomes ..... Feb 42
New England, Conn. (PCA) Meet, 13 Suppliers At ..... Jan 38
" " PCA, Maguire (Edward C.) Heads ..... Jan 42
" " PCA Meets With Belitzia ..... Mar 39
" " PCA Meets At Short Course ..... Jun 40
" " PCA Holds Distaff Night ..... Jul 46
New Jersey PCA Prexy, Stucker (Harry) Stays ..... Jan 38
" " PCA Holds Annual Clinic ..... Jul 44
New York PEA Honors Huberman (Jacob) ..... Feb 44
" " PEA, Spencer Speaks To ..... Jun 40
" " PEA Views Termite Film ..... Jul 44
" " PEA To Honor Rabin (Harry) ..... Dec 40
" " PEA About Korea, Forbes Tells ..... May 42
North Carolina PCOs Organize ..... Apr 40
North West PCA, Athlestan (Arnold) Heads ..... Mar 30
Ohio PCOs Elect Meyers (Harry L.) ..... Feb 42
Oklahoma PCA Plans Short Course ..... Jan 38
" (PCA) Course, 81 Register For ..... Mar 38
" PCA Head, Hoffman (C.A.) New ..... Apr 42
" PCA Prexy, Hoffman (F. W.) ..... May 38
" PCA Talks Termites ..... Jun 38
Omaha PCA Prexy, Fuller (Floyd) New ..... Apr 38
St. Louis PCA, Woods (Tom) Picked By ..... Apr 40
Tennessee PCA, Dykstra Warns ..... Apr 40
" Ass'n, Organize New ..... Aug 42
" (PCA) Conference In Nashville ..... Sep 46
" PCA, "Standard Techniques Needed" Buettner Tells ..... Oct 70
(Texas) Abilene PCOs Form Association ..... Jun 42
Texas PCA Talks Ants, Scorpions ..... Jan 51
" PCA President, Bell (Kenneth) Is ..... Feb 44
Texans (PCA) Talk Defense, Rats ..... Jul 44
Texan (PCA) "Study Day" Held ..... Oct 70
(Texas) Houston PCA, Holder (Ronnie) Heads ..... Aug 42
Texas PCA, "Eliminate Racketeers," Corley Advises ..... Dec 40
Virginia (PCA) Meet, Talk Laws at 3-Day ..... Feb 40
" (PCA) Joint Meet, "Find Sane Controls" Fenwick Tells ..... May 42
" PCAers Meet For Short Course ..... Nov 40
Western Oklahoma PCA Elects Graham (Tom) ..... Mar 38
Wisconsin PCA Conference, Have "Agreeable" Customer Relationship, Schuller Tells PCOs At ..... May 40

CLASSIFIED ADVERTISEMENTS

When answering ads where box number only is given, please address as follows: Box number, c/o Pest Control, 1900 Euclid Building, Cleveland 15, Ohio.

Rates: "Position Wanted" 5c per word, minimum, $1.00. All other classifications, 10c per word minimum $2.00. All classified ads must be received by Publisher at least two weeks preceding publication date and be accompanied by cash or money order covering full payment.

SALESMAN WANTED

For nationally approved, spray-on product sold and used by exterminators, dry cleaners, etc., called Gard Flame & Moth Control. Unusual commission opportunity. Mail qualifications, territory now covered, to U. S. Chemical Products Co., P. O. Box 212, Columbus 9, Ohio.

HELP WANTED

Factory representative to sell Rat-Deth (Red Squill - Cheese Flavored). Liberal commission on drop shipments to pest control operators, large users and retail dealers. See our display adv. Write for Franchise Bulletin today. Farm Products Company, PC-11, Excelsior Springs, Mo.

WANTED TO BUY

Want to buy established pest control business in metropolitan New York area. Not interested in N. Y. City. Prefer adjacent Long Island, New Jersey or lower Connecticut. Write Box 262 Pest Control magazine.

WANTED TO BUY

Established pest control business in Texas, Oklahoma, New Mexico, Arizona. Write Box 263 Pest Control magazine.

Insect Pests In Cargo Ships

(from page 16)

bromide in air-tight rooms or lockers in the ship. Such places are common in the average ship, but if used for this purpose should be suitable for ventilation following fumigation. The dosage of methyl bromide for a space full of loosely piled bags is 1 to 1½ pounds per 1000 cubic feet for 16 to 24 hours, at a temperature of 60 degrees F. or above. If possible, circulation of the fumigant should be aided by use of one or more fans. For complete mortality of all insect stages in bales of pressed bags, fumigation in a vacuum chamber with HCN or methyl bromide is advisable.

Brazil Ups Pyrethrum Crop

Production of Brazilian pyrethrum for 1951-52, according to the *Foreign Commerce Weekly*, is expected to reach 800-900 metric tons, a larger estimate than the previous year. However, since prices of Brazilian pyrethrum cannot compete with prices on the world market, little international demand is forecast, unless prices suddenly rise to meet the South American country's higher levels.

DuPont Develops, Tests, CMU—New Weed Killer

Researchers at the E. I. duPont deNemours & Co., Wilmington, Del., have developed a new non-selective chemical weed-killer, which "erases" dense growths of mixed grasses and broad-leaf weeds, leaving only an expanse of bare soil.

Known as CMU, short for 3-(p-chlorophenyl)-1,1 dimethylurea, the chemical has undergone extensive tests, say company officials, under a wide range of field conditions during the past year.

Describing the results of CMU tests on such grassy weeds as Johnson grass, Bermuda grass, quack grass and nut grass, duPont researchers H. C. Bucha and C. W. Todd wrote in the latest issue of *Science* magazine: "The initial effect, following CMU application, generally is leaftip dieback, beginning on the older leaves. This is followed by progressive chlorosis and retardation of growth, ending in the death of the plant." They added that field tests showed CMU acts readily through the root system and is translocated upward to the leaves.

Prevention of growth of grass and weeds on railroad beds and trestle locations, around power sub-stations and manufacturing plants are cited as some of the potential commercial uses for CMU by company officials.

It is also claimed to be non-corrosive and non-inflammable, with an extremely low toxicity to warm-blooded animals. Additional tests are now under way to determine the duration of soil sterility caused by the new compound. During 1952, a limited amount of the new weed killer will be available for commercial use. It will be manufactured at the Cleveland, Ohio plant of duPont's Grasselli Chemicals Department.

RAT-DETH Franchise

(Red Squill - Cheese-Flavored)

● **EXTRA PROFIT** — on sales and service. One of surest, safest. Proved by thousands. Satisfaction guaranteed. Red Squill—500 MG/KG.

● **THREE SIZES:** $3.00 Jumbo size (7½ oz.); $2.00 (Farm size) (4½ oz.); $1.00 House size (2¼ oz.)

● **WHOLESALE DISCOUNT**—40% on 3 or over. Extra Discount — 10% on $10.00 net orders or over. Postpaid — on C.O.D. orders. Pay on arrival. $2.00 Farm size sample only $1.00 postpaid.

● **FRANCHISE BULLETIN** — on request. Explains sales and service features.

Don't delay! Write today!

Farm Products Co., Inc.

PC-10 Excelsior Springs, Mo.

Special Combination *Christmas Offer*

—●—

1 Year Subscription to PEST CONTROL

and

1 Beautiful Binder that will hold all the issues published in one year

Just $6.50

7.50 outside U. S. A.

If you wish to give this fine combination for Christmas, send both your name and the receiver's name and we'll write a special letter saying these valuable gifts are coming with your compliments.

Send Check or Money Order to

PEST CONTROL
1900 Euclid Bldg.
Cleveland 15, Ohio

PESTALES

Hungry, lonely mice
Gave us Silent, Holy Night

Because some hungry mice ate the bellows out of a church organ in Oberndorf, Austria, 131 years ago, this Christmas Eve the words of that most beloved of all carols will again waft out over towns and villages and farms of people the world over.

The mice, however, don't deserve the entire credit for composing this lovely melody. It began in Oberndorf, in December, 1818. Father Joseph Mohr, priest of the small parish of Saint Nikolaus, discovered to his dismay that rodents had chewed up the bellows of his church organ. In desparation, he took the problem to his friend, school teacher Franz Xavier Gruber, who was also church organist. Both men knew how much the people of the village loved music, and how disappointed they would be over a Christmas mass celebrated without the traditional holiday airs. The organ was beyond repair, but together they set out to do what they could.

As parishoners knelt at their pews at midnight mass that Christmas Eve, they heard not the usual triumphant chords of an organ and resounding hallelujahs of a full chorus, but only a bass and a tenor, singing a beautiful and simple carol to the accompaniment of Father Mohr's guitar. The farmers and villagers of that picturesque Austrian valley were pleased with the hymn, and hummed it to themselves as they crunched home through the heavy snow after mass. Gradually, the song spread to other parts of the Austrian tyrol, and years later, after both Father Mohr and Gruber had died unrecognized for their great contribution to Christmas music, the song Silent Night became the possession of everyone who honored and followed the name of Jesus Christ.

Today, as carols again sound in our churches, over our radios and in our homes, the world faces grave dangers, grave threats. It is a world in which we ask much and give little. It is symbolic, perhaps, that one of the world's most priceless sentiments was given to us by two little-known men and a horde of hungry church-mice.

Dr. Guy C. Crampton

Dr. Guy C. Crampton, widely known entomologist, died in Albany, N. Y. October 31. He was 70.

In 1904 Dr. Crampton graduated from Princeton. He later went to Amherst, where he held a professorship of entomology at the University of Massachusetts for 30 years.

ADVERTISERS' INDEX

Acme Exterminators	35	McLaughlin, Gormley, King Co.	Nov.
Aegis Laboratories, Inc.	Nov.	Monsanto Chemical Co.	7
American Cyanamid Co.	11	S. B. Penick & Co.	8
American Fluoride Corp.	33	Per-Mo Products Co.	33
American Smelting & Refining Co.	43	The Peters Co.	37
B & G Company	3, 21, 28	Pest Control Chemicals Co.	43
Blackwell Burner Co.	45	Pest Control Equipment Co.	29, 31, 37, 4th Cover
Broadway Rubber Corp.	41	John Powell & Co.	2nd Cover
Chapman Chemical Co.	25	Prentiss Drug & Chemical Co.	4
Chek Products Co.	Nov.	Residex Corp.	35
Chemical Insecticide Corp.	45	Rid-Rat Trap Co.	Nov.
Chemical Service Corp.	35	Sennewald Drug Co., Inc.	45
Chipman Chemical Co.	Nov.	Spraying Systems Co.	35
Columbia Chemical Co.	Nov.	Todd Shipyards Corp.	29
The Dioptron Co.	34	U. S. Industrial Chemicals, Inc.	19
Dyna-Fog Corp.	6	Universal Paper Products Co.	32
Ewing Manufacturing Co.	31	Vaccinol Products Corp.	37
Farm Products Co., Inc.	49	Velsicol Corp.	27
Joseph Gabos	43	Virginia Smelting Co.	17
Getz Exterminators, Inc.	Nov.	B. & D. A. Weisburger	37
H. D. Hudson Mfg. Co.	15	Wisconsin Alumni Research Foundation	33
The Holbrook Co.	Nov.	Wood Treating Chemicals Co.	22
Idico Products Co.	31		
Innis, Speiden & Co.	20		

Consultant

on the Control of Termites, Wood-Boring Insects and Wood Preservation

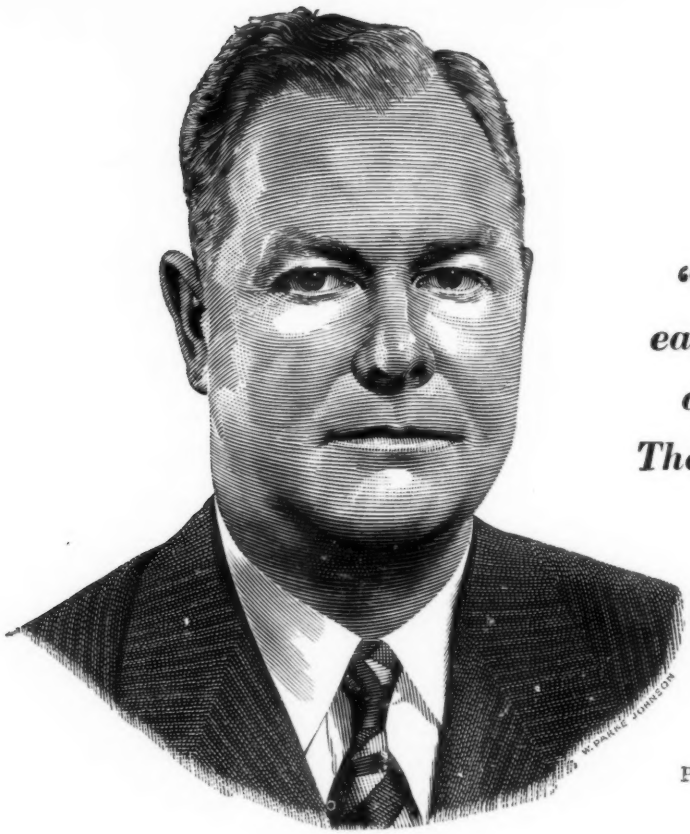
(1) Advice on Job, 1-2 days.
(2) Work with Termite (or other) crews.
(3) Yearly Retainer Fee: Specified number of consultations.
(4) Agent to Consult Government Departments.
(5) Advice by Letter or Telephone

Dr. Thomas E. Snyder
2801 Adams Mill Road, N.W. Washington 9, D. C.
Telephone: DUpont 3757

Correspondence Course in Structural Pest Control
by Ronald W. Hunt

Nineteen specially prepared, college-level lessons on insecticides, fungicides, fumigants, fumigation techniques, dry-wood termites, structural correction, rats, salesmanship and many other important phases of the pest control industry, with full test questions. Fee, $15.00.

For details write TODAY to
University Extension
University of California
Department of Correspondence Instruction
Berkeley 4, California



"... Nearly nine out of each ten of our employees are ... participating in The Payroll Savings Plan."

E. J. HANLEY

President, Allegheny Ludlum Steel Corporation

"Systematic Savings offer the surest means of future security and we know of no better systematic savings plan than that afforded by payroll deduction purchases of U. S. Defense Bonds. Nearly nine out of each ten of our employees are helping their country while they save by participating in this plan."

There are three easily understood reasons why 88% of Allegheny Ludlum's 14,378 employees are enrolled in the Payroll Savings Plan:

- the recognition by Mr. Hanley and his associates of the Payroll Savings Plan as a major contribution to America's Defense effort . . . an important, stabilizing factor in our national economy . . . a road to personal security for Allegheny Ludlum employees.

- Allegheny Ludlum's person-to-person canvass of employees, which put an application blank for the Payroll Savings Plan in the hands of every man and woman on the company payroll.

- the patriotism and sound sense of the Allegheny Ludlum employees who know that every dollar they invest *each month* in U. S. Defense Bonds is a double duty dollar—it helps to keep America strong . . . it builds personal security for the employee.

If employee participation in *your* Payroll Savings Plan is less than 50% . . . or if you are one of the relatively few industrial companies that does not have a Payroll Savings Plan, phone, wire or write *today* to Savings Bond Division, U. S. Treasury Department, Suite 700, Washington Building, Washington, D. C. You will get all the assistance you may need to place your company among the thousands of companies that have 60, 70, 80%, even 88% participation in the Plan That Protects.

The U. S. Government does not pay for this advertising. The Treasury Department thanks, for their patriotic donation, the Advertising Council and

PEST CONTROL Magazine

TWO NEW ELECTRIC RESIDUAL APPLICATORS FOR THE PCO

One of the Biggest Dollar Values in Power Sprayers ever Offered to the Pest Control Industry

CUT THAT BIG JOB DOWN TO YOUR SIZE

Let the Electric Residual Applicator do your pumping! Let it maintain constant pressures for you! Let it carry your insecticide through 100 feet or more of hose to the spot where you need it!

No compressor or compression tank needed. Draw insecticide or soil poisons from any size container. Simple to operate, easy to set up on the job. Handles both oil solutions and water emulsions.

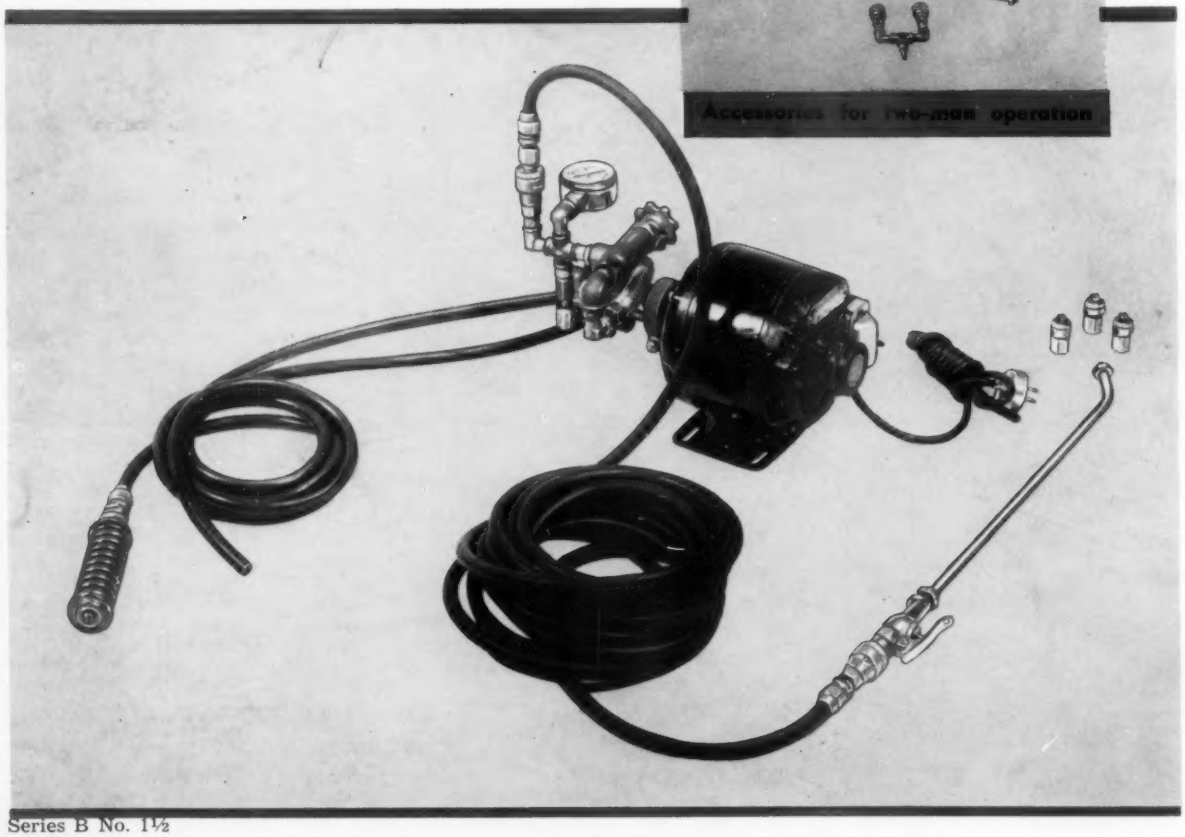
Series B No. 1½ — Complete as pictured. The pump is rated at 2 gallons per minute at zero p. s. i. The motor is 1/3 h. p. Total hose, 112 feet, inside diameter ¼". Pressures up to 150 p. s. i., regulated by hand wheel adjustment. Large-screen suction strainer. Pressure gauge. Quick coupling hose connectors. Shut-off valve, three different capacity nozzles, 18" extension wand, motor-mounted electric toggle switch, 6' neoprene cord with armored plug, renewable hose end adapters, all brass nipples, bushings, cross fittings and elbows.

List Price Complete $168 75 To The PCO: $135.00

Fittings for two-man operation, Series B No. 1½ (as pictured) $15.00 net

Series B No. 2 — For the termite operator who wants larger pump, hose, fittings, etc. Write for detailed specifications and price.

Accessories for two-man operation



Series B No. 1½

Write for Catalog

PCE

PEST CONTROL EQUIPMENT COMPANY

47 West 43rd Street VAnderbilt 6-5390 New York 18, N. Y.